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Water Resources Data for Montana

Water Year 1976

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U.S. GEOLOGICAL SURVEY WATER-DATA REPORT MT-76-1

Prepared in cooperation with the State of Montana
and with other agencies

CALENDAR FOR WATER YEAR 1976

1975

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Water Resources Data for Montana

Water Year 1976

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT MT-76-1

Prepared in cooperation with the State of Montana
and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

CECIL D. ANDRUS, Secretary

GEOLOGICAL SURVEY

V. E. McKelvey, Director

For information on the water program in Montana write to
District Chief, Water Resources Division
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P.O. Box 1696
Helena, Montana 59601

1977

PREFACE

This report was prepared by the U.S. Geological Survey in cooperation with the State of Montana and with other agencies, by personnel of the Montana district of the Water Resources Division under the supervision of G. M. Pike, District Chief, and A. Clebsch, Jr., Regional Hydrologist, Central Region.

This report is one of a series issued State by State under the general direction of J.S. Cragwall, Jr., Chief Hydrologist, and G. W. Whetstone, Assistant Chief Hydrologist for Scientific Publications and Data Management.

BIBLIOGRAPHIC DATA SHEET	1. Report No. USGS/WRD/HD-77/064	2.	3. Recipient's Accession No.

4. Title and Subtitle

Water Resources Data for Montana, 1976

5. Report Date: September 1977

6.

7. Author(s)

8. Performing Organization Rept. No. USGS-WDR-MT-76-1

9. Performing Organization Name and Address

U.S. Geological Survey, Water Resources Division
P.O. Box 1696
Helena, Montana 59601

10. Project/Task/Work Unit No.

11. Contract/Grant No.

12. Sponsoring Organization Name and Address

U.S. Geological Survey, Water Resources Division
P.O. Box 1696
Helena, Montana 59601

13. Type of Report & Period Covered: Annual-Oct. 1, 1975 to Sept. 30, 1976

14.

15. Supplementary Notes

Prepared in cooperation with the State of Montana and with other agencies.

16. Abstracts

Water resources data for the 1976 water year for Montana consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels in wells.

This report contains discharge records for 217 gaging stations; stage only records for 1 lake station; stage and contents for 7 lakes and reservoirs; water quality for 104 stations, 4 lakes; water levels for 25 observation wells. Also included are 205 crest-stage partial-record stations and 53 smaller reservoirs. Additional water data were collected at various sites, not part of the systematic data collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in Montana.

17. Key Words and Document Analysis. 17a. Descriptors

*Montana, *Hydrologic data, *Surface water, *Ground water, *Water quality, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediments, Water temperatures, Sampling sites, Water levels, Water analyses.

17b. Identifiers/Open-Ended Terms

17c. COSATI Field/Group

18. Availability Statement	19. Security Class (This Report)	21. No. of Pages
No restriction on distribution. This report may be purchased from: National Technical Information Service, Springfield, VA 22161	UNCLASSIFIED	776
	20. Security Class (This Page) UNCLASSIFIED	22. Price

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(Letter after station name designates types of data: (d) discharge, (c) chemical, (b) biological, (m) microbiological, (t) water temperature, (s) sediment, (e) elevations or contents)

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WATER RESOURCES DATA FOR MONTANA, 1976

INTRODUCTION

Water resources data for the 1976 water year for Montana consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water-levels of wells. This report contains discharge records for 217 gaging stations; stage only records for 1 lake station; stage and contents for 9 lakes and reservoirs; water quality for 61 gaging stations, 43 water-quality stations, and 4 lake stations; and water levels for 25 observation wells. Also included are data for 205 crest-stage partial-record stations and 53 smaller reservoirs. Additional water data were collected at various sites, not involved in the systematic data collection program, and are published as miscellaneous measurements. A few pertinent stations (not included above) in bordering States are also included in this report; however, numerous stations in Canada operated for the International Joint Commission under cooperative agreement with the U.S. Department of State are included in the above. Locations of gaging stations are shown on figure 3 , ground-water observation wells are shown on figure 4 , and water-quality stations are shown on figure 4 . These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Montana.

Records of discharge or stage of streams, and contents or stage of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States." Through September 30, 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from Branch of Distribution, U.S. Geological Survey, 604 South Pickett Street, Alexandria, Va. 22304.

For water years 1961 through 1974, streamflow data were released by the Geological Survey in annual reports on a State-boundary basis. Water-quality records beginning with the 1964 water year, and ground-water data since the 1971 water year have been similarly released either in separate reports or in conjunction with streamflow records. Beginning with the 1975 water year, water data for streamflow, water quality, and ground-water are published as an official Survey report on a State-boundary basis. These official Survey reports carry an identification number consisting of the two letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report MT-76-1." Water-Data reports are for sale by the National Techinical Information Service, U.S. Department of Commerce, Springfield, Virginia, 22161.

COOPERATION

The U.S. Geological Survey and organizations of the State of Montana have had cooperative agreements for the systematic collection of streamflow records since 1906, for ground-water levels since 1964, and for water-quality records since 1946. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

Montana Department of Natural Resources and Conservation
G. J. Wicks, director

Montana State Highway Commission
H. J. Anderson, director of highways.

Montana Department of Fish and Game
W. R. Woodgerd, director

Montana Department of Health and Environmental Sciences
J. S. Anderson, director

Endowment and Research Foundation of Montana State University
R. E. Huffman

Montana Bureau of Mines and Geology
S. L. Groff, director

Assistance in the form of funds or services was given by the Department of State, in collecting records published in this report for 56 gaging stations and 2 water-quality stations; by the Corps of Engineers, U.S. Army for 25 gaging stations and 12 water-quality stations; by the Bureau of Land Management, U.S. Department of the Interior for 5 gaging stations and 29 water-quality stations; by the Environmental Protection Agency for 7 water-quality stations; by the Bureau of Reclamation, U.S. Department of the Interior for 9 gaging stations; by the Bonneville Power Administration, U.S. Department of the Interior for 4 gaging stations and 2 water-quality stations; and the Bureau of Indian Affairs, U.S. Department of the Interior for 3 gaging stations.

The following organizations aided in collecting records:

The Montana Power Company, The Washington Water Power Company, Pacific Power and Light Company, and the city of Helena.

On waters adjacent to the international boundary, certain gaging stations are maintained by the United States (or Canada) under agreement with Canada (or the United States) and the records are obtained and compiled in a manner equally acceptable in both countries. Those stations are designated herein as "International gaging stations."

Organizations that supplied data are acknowledged in station descriptions.

ACKNOWLEDGMENT

Montana district personnel who contributed significantly to the collection and preparation of the data in this report were: L. G. Moore. chief, Hydrologic Surveillance, Analysis and Research Section, assisted by J. H. Diamond, M. K. White, J. R. Knapton, R. R. Shields, C. O. Geiger, L. L. Hull, and N. D. Haffield.

HYDROLOGIC CONDITIONS

As the 1976 water year began, streamflow was mostly above average (greater than 120 percent) October through May. Due to heavy precipitation and warm days during this period, especially December through May, many index stations reported near or above average runoff for six of the eight months. Examples of stations with above average monthly mean discharges are as follows:

Marias River near Shelby had 3 consecutive months where the monthly mean discharge was 246-306 percent of normal.

Yellowstone River at Billings had an all-time monthly mean discharge two consecutive months; continuous record at this site has been collected since 1928.

Five of the six reporting index stations (Marias River near Shelby, Yellowstone River at Corwin Springs, Clark Fork at St. Regis, Middle Fork Flathead River near West Glacier, and Yellowstone River at Billings) had 3 or more consecutive months during the period October to February where the streamflow was above average.

Despite unusually high stages during this period, little flood damage occurred around the State. Since higher than normal temperatures occurred over the winter months, snowmelt runoff gradually increased the stages of many gaging stations.

June, when usually the highest stages occur, streamflow was below-average to normal across the State. For the months July and August, streamflow increased to above average. This was caused by unusually high precipitation that fell across parts of the State. For example, Glasgow had the wettest July on record and Kalispell the wettest August on record. September streamflow decreased seasonally to the normal range. See table 4, p. 19 for a complete listing of flood stages and discharges during 1976.

Contents in all major hydroelectric reservoirs began and ended the water year near maximum capacity, which is normal for the year. Contents in Flathead Lake and Hungry Horse Reservoir closely followed the mean for the year, Flathead Lake slightly under and Hungry Horse Reservoir slightly above normal. Fort Peck Lake, however, was maintained between 91-97 percent of capacity. This range in contents usually were 130 percent of average. Contents in Canyon Ferry Reservoir were usually 102 to 111 percent of normal except for March and April when contents were dropped to 7 percent below normal. Irrigation reservoirs began the season with above average contents and generally remained above average throughout the year.

DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report are defined below. See also the table for converting English units to International System of units (SI) on the inside of the back cover.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Algae are mostly aquatic single-celled, colonial, or multi-celled plants, containing chlorophyll and lacking roots, stems, and leaves.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer, tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as the organisms which produce colonies within 24 hours when incubated at 35°C ± 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal coliform bacteria are bacteria that are present in the intestines or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5°C ± 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C ± 1.0°C on M-enterrococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2).

Dry mass refers to the mass of residue present after drying in an oven at 60°C for zooplankton and 105°C for periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and ash mass, and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash mass and dry mass.

Bottom material: See Bed material.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

Cfs-day is the volume of water represented by flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons or 2,447 cubic meters.

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water, and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common pigments in plants.

Color unit is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of salt water.

Cubic feet per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Cubic foot per second (FT^3/s, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment), that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Dissolved refers to the amount of substance present in true chemical solution. In practice, however, the term includes all forms of substance that will pass through a 0.45-micrometer membrane filter, and thus may include some very small (coloidal) suspended particles. Analyses are performed on filtered samples.

Drainage area of a stream at a specific location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from presipitation normally drains by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontribution areas, within the area unless otherwise noted.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water..

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an 8-digit number.

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic detergent compounds.

Micrograms per gram (ug/g) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (gram) of sediment.

Micrograms per liter (UG/L, ug/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L, and is based on the mass of sediment per liter of water-sediment mixture.

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meters (m^2), acres, or hectares. Periphyton benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliters (mL) or liters (L). Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Partial-record station is a particular site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle-size is the diameter, in millimeters (mm), of suspended sediment or bed material determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology.

The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay	0.00024 - 0.004	Sedimentation.
Silt	.004 - .062	Sedimentation.
Sand	.062 - 2.	Sedimentation or sieve.
Gravel	2.0 -64.0	Sieve.

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic material is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, mass or volume.

Pesticides are chemical compounds used to control undesirable plants and animals. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides. Insecticides and herbicides, which control insects and plants respectively, are the two categories reported.

Picocurie (PC, pCi) is one trillionth (1×10^{12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment, and are commonly known as algae.

Blue-green algae are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells/mL of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algal mats or floating "moss" in lakes. Their concentrations are expressed as number of cells/mL of sample.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column, and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly) green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated by the plants (carbon method).

Milligrams of carbon per area per unit time (mg C/m^2.time) for Phytoplankton are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon 14). The carbon 14 method is of greater sensitivity than the oxygen light and dark bottle method, and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Runoff in inches (IN, in) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical presipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream of is the quantity of sediment, as measured by dry weight or volume, that passes a section in a given time. It is computed by multiplying discharge times mg/L times 0.0027.

Suspended-sediment load is quantity of suspended sediment passing a section in a specified period.

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Solute is any substance derived from the atmosphere, vegetables, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in micromhos per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and volume of water per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the work "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lived.

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multi-plate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection.

Surface area of a lake is that area outlined on the latest U.S.G.S. topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimetered. All areas shown are those for the stage when the planimetered map was made.

Surficial bed material is that part (0.1 to 0.2 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of the total concentration in a water-sediment mixture. The water-sediment mixture is associated with (or sorbed on) that material retained on a 0.45 micrometer filter.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, Hexagenia limbata is the following:

Kingdom	Animal
Phylum	Arthropoda
Class	Insecta
Order	Eohemeroptera
Family	Ephemeridae
Genus	Hexageria
Species	Hexagenia limbata

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per liter by 0.00136.

Tons per day is the quantity of substance in solution or suspension that passes a stream section during a 24-hour day.

Total load (tons) is the total quantity of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the total discharge, times the mg/L of the constituent, times the factor 0.0027, times the number of days.

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WRD is used as an abbreviation for "Water-Resources Data" in the REVISED RECORDS paragraph to refer to State annual basic-data reports published before 1975.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary that enters between two main-stream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary on which a station is situated with respect to the stream to which it is immediately tributary is indicated by an indention in a list of stations in the front of the report. East indention represents one rank. This downstream order and system of indention show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

As an added means of indentification, each hydrologic station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Gaps are left in the series of number to allow for new stations that may be established; hence the numbers are not consecutive. The complete 8-digit number for each station, such as 06090500, which appears just to the left of the station name includes the 2-digit part number "06" plus the 6-digit, downstream order number "090500." In this report, the records are listed in downstream order by parts. The part number refers to an area whose boundaries coincide with certain natural drainage lines. Records in this report are in Part 5 (Hudson Bay basin), Part 6 (Missouri River basin) and Part 12 (Upper Columbia River basin). All records for a drainage basin encompassing more than one State can be arranged in downstream order by assembling pages from the various State reports by station number to include all records in the basin.

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The 8-digit downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

The well and miscellaneous site numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, the next 7 digits denote degrees, minutes, and seconds of longitude, and the last 2 digits (assigned sequentially) identify the wells or other sites within a 1-second grid. See figure 1 below.

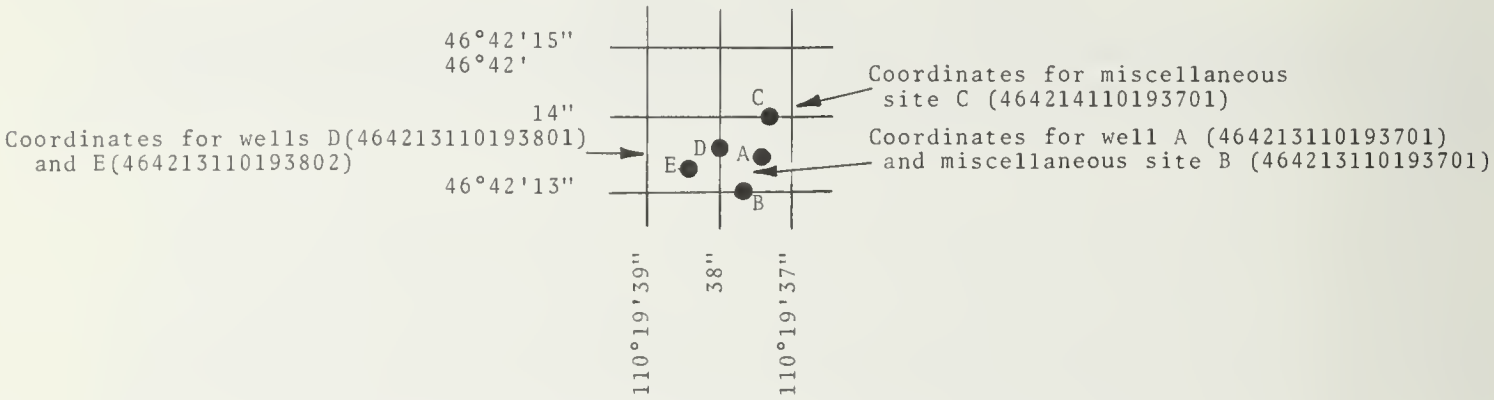


Figure 1. System for numbering wells and miscellaneous sites (latitude and longitude)

SPECIAL NETWORKS AND PROGRAMS

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

National stream-quality accounting network (NASQAN) is a data collection network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated into the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality.

Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of the commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and Computation of Data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observation of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from either direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard textbooks, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharge are computed from the daily figures. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is computed by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

At some stream-gaging stations the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

At some stream-gaging stations in Montana the stage-discharge relation is usually affected by ice from November to March, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of gage-height record and occasional winter discharge measurements. Consideration is given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge for other stations in the same or nearby basins.

For a lake or reservoir stations, capacity tables giving the contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly change in contents is computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records for other stations in the same or nearby basins. Likewise daily contents may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulations of daily and monthly figures. For gaging stations on streams or canals a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lakes and reservoirs, a monthly summary table of stage and contents or a table showing the daily contents is given. Tables of daily mean gage heights are included for some streamflow stations and for some reservoir stations. Records are published for the water year, which begins on October 1 and ends on September 30. Records for some gaging stations on streams or canals in Canada and along the international boundary are published on an irrigation season basis and the tables of daily discharge generally show data from March through October. A calendar for the current water year is shown on the reverse side of the back cover to facilitate findings the day of the week for any date.

The description of the gaging station gives the location, drainage area, period of record, notations of revisions of previously published records, type and history of gages, general remarks, average discharge, and extremes of discharge or contents. The location of the gaging station and the drainage area are obtained from most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is brought out by

notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only pea discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revisicn of the drainage area only are usually not published in the annual series of reports.

The type of gage currently in use, the datum of the present gage above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." In references to datum of gage, the phrase "mean sea level" denotes "Sea Level Datum of 1929" as used by the Topographic Division of the Geological Survey unless otherwise qualified.

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow of the gaging station is given under "REMARKS." For reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. In addition, the median of yearly mean discharges is given for stream-gaging stations having 10 or more complete years of record if the median differs from the average by more than 10 percent. Under "EXTREMES" are given first, the extremes for the period of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with "EXTREMES FOR THE CURRENT YEAR"; if they are, all independent peaks, including the maximum for the year, above the selected base with the time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharges for the month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN"), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches. In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar and water years.

Footnotes to the table of daily discharge are introduced by the word "NOTE." Footnotes are used to indicate periods for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-discharge relation, or of any other unusual condition at the gage site are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is published for all reservoirs for which records are published on a daily basis, but is not published for reservoirs for which only monthly data are given.

Data collected at partial-record stations follow the information for continuous record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. Occasionally, a series of discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements are also given in special tables following the tables of partial-record stations.

Accuracy of field data and computed results

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of records.

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good", within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 cfs; to tenths between 1.0 and 10 cfs; to whole numbers between 10 and 1,000 cfs; and to 3 significant figures above 1,000 cfs. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other data available

Information of a more detailed nature than that published for most of the gaging stations such as observations of water temperatures, discharge measurements, gage-height records, and rating tables is on file in the district office. Also most gaging-station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the district office.

Publications

The annual series of water-supply papers that give information on quantity of surface waters in Montana are given in the following table. Data for the Hudson Bay basin is given in Part 5, for the Missouri River basin in Part 6, and for the Upper Columbia River basin in Part 12.

Table 1.--Water-supply paper numbers containing results of stream measurements in Montana 1899-1970 including compilation reports.

Year	Part 5	Part 6	Part 12	Year	Part 5	Part 6	Part 12
1899	36	36,37	38				
1900	49	49	51,52				
1901	65,66,75	66,75	66,75	1936	805	806	812
1902	83,85	84	85	1937	825	826	832
1903	98,99,100	99	100	1938	855	856	862
1904	128,130	130	135	1939	875	876	882
1905	171	172	178	1940	895	896	902
1906	207	208	214	1941	925	926	932
1907	245	246	252	1942	955	956	962
1908	245	246	252	1943	975	976	982
1909	265	266	272	1944	1005	1006	1012
1910	285	286	292	1945	1035	1036	1042
1911	305	306	312	1946	1055	1056	1062
1912	325	326	332A	1947	1085	1086	1092
1913	355	356	362A	1948	1115	1116	1122
1914	385	386	392	1949	1145	1146	1152
1915	405	406	412	1950	1175	1176	1182
1916	435	436	442	1951	1208	1209	1216
1917	455	456	462	1952	1238	1239	1246
1918	475	476	482	1953	1278	1279	1286
1919	505	506	512	1954	1338	1339	1346
1920	505	506	512	1955	1388	1389	1396
1921	525	526	532	1956	1438	1439	1446
1922	545	546	552	1957	1508	1509	1516
1923	565	566	572	1958	1558	1559	1566
1924	585	586	592	1959	1628	1629	1636
1925	605	606	612	1960	1708	1709	1716
1926	625	626	632	1961-65	1913	1916	1933
1927	645	646	652	1966-70	2113	2116	2133
1928	665	666	672				
1929	685	686	692				
1930	700	701	707				
1931	715	716	722	1950	1308	1309	1316
1932	730	731	737	Compilation			
1933	745	746	752				
1934	760	761	767	1960	1728	1729	1736
1935	785	786	792	Compilation			

Records of discharge collected by agencies other than the Geological Survey

Records of discharge not published by the Geological Survey were collected at 94 sites in Montana during the 1976 water year by the following agencies: Montana Department of Natural Resources and Conservation (47 sites); National Weather Service, National Oceanic and Atmospheric Administration (8 sites); Forest Service, U.S. Department of Agriculture (2 sites); Corps of Engineers, U.S. Army (8 sites); Montana University Joint Water Resources Center (12 sites); Soil Conservation Service, U.S. Department of Agriculture (17 sites).

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

Surface water samples for analyses usually are collected at or near gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, pH, dissolved oxygen, water temperature, sediment discharge, etc.); extremes for the period of daily record; extremes for the current year; and general remarks.

Water analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey Techniques of Water-Resources Investigations listed on a following page.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the district office.

Water temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diurnal temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross-section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided day method. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the period, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included.

Publications

The annual series of water-supply papers that give information on quality of surface waters in Montana are shown in the following table. Data for Hudson Bay and Missouri River basins are given in parts 5-6 and for Upper Columbia River basin are given in Part 12.

Table 2.--Water-supply paper numbers and parts, water years, 1947-71.

Year	Parts 5-6	Part 12	Year	Parts 5-6	Part 12
1947	1102	----	1958	1572	1574
1948	1132	----	1959	1643	1645
1949	1162	----	1960	1743	1745
1950	1187	----	1961	1883	1885
1951	1198	1200	1962	1943	1945
1952	1251	1253	1963	1949	1951
1953	1291	1293	1964	1956	1959
1954	1351	1353	1965	1963	1966
1955	1401	1403	1966	1993	1996
1956	1451	1453	1967	2013	2016
1957	5121	1523	1968	2095	2100
			1969	2145	2150
			1970	2155	2160

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection of the data

Only ground-water level data from a basic network of observation wells are published herein. This basic network contains observation wells so located that the most significant data are obtained from the fewest wells in the most important aquifers.

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude and (2) a local number that is provided for local needs. See figure 1.

Measurements are made in many types of wells, under varying conditions of access and at different temperatures, hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Water-level measurements in this report are given in feet with reference to either mean sea level (msl) or land-surface datum (lsd). Mean sea level is the datum plane on which the national network of precise levels is based; land-surface datum is a datum plane that is approximately at land surface at each well. If known, the altitude of the land-surface datum above mean sea level is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (eom).

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error of determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth of a few hundredths of a foot. For lesser depths to water, the accuracy if greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

Publications

Publication of ground-water level data for the United States in water-supply papers was begun by the Geological Survey in 1935. From 1935 through 1939, a single water-supply paper for each year covering the entire nation was issued (Water-Supply Papers 777, 817, 840, 845, and 886). From 1940 through 1974, separate water-supply papers were issued for 6 sections of the United States. Water-level data for Montana are in the water-supply papers listed in the following table, each report containing one or more calendar years (January-December) of data. Data in this report are for the 12-month water year ending September 30.

Table 3.--Water-supply paper numbers for Northwestern United States, calendar years 1940-75

Year	WSP No.	Year	WSP No.	Year	WSP No.
1940	910	1946	1075	1952	1225
1941	940	1947	1100	1953	1269
1942	948	1948	1130	1954	1325
1943	990	1949	1160	1955	1408
1944	1020	1950	1169	1956-60	1760
1945	1927	1951	1195	1961-65	1845
				1966-70	1980

Information about reports and other data on ground water in Montana may be obtained from the district office, at the address given on the back of the title page.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Thirty-one manuals by the U.S. Geological Survey have been published o date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 604 South Picket Street, Alexandria, VA 22304 (authorized agent of the Superintendent of Documents, Government Printing Office).

NOTE: When ordering any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations".

1-D1. Water temperature-influential factors, field measurement, and data presentation, by H.H. Stevens Jr., J.F. Ficke, and G.F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 p. 1.60.

2-D1. Application of surface geophysics to ground-water investigations, by A.A.R. Zohdy, G.P. Eaton, and D.R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages. 1.90.

2-E1. Application of borehole geophysics to water-resources investigations, by W.S. Keys and L.M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages. 1.75.

3-A1. General field and office procedures for indirect discharge measurements, by M.A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages. 0.25.

3-A2. Measurement of peak discharge by the slope-area method, by Tate Dalrymple and M.A. Benson: USGA--TWRI Book 3, Chapter A2. 1967. 12 pages. 0.20.

3-A3. Measurement of peak discharge at culverts by indirect methods, by G.L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages. 0.40.

3-A4. Measurement of peak discharge at width contractions by indirect methods, by H.F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages 1.00.

3-A5. Measurement of peak discharge at dams by indirect methods, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages. 0.30.

3-A6. General procedure for gaging streams, by R.W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6, 1968. 13 pages. 0.20.

3-A7. Stage measurements at gaging stations, by T.J. Buchanan and W.P. Somers: WSGS-TWRI Book 3, Chapter A7. 1968. 28 pages. 0.45.

3-A8. Discharge measurements at gaging stations, by T.J. Buchanan and W.P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages. 1.25.

3-A11. Measurement of discharge by moving-boat method, by G.F. Smoot and C.E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages. 0.40.

3-A12. Fluorometric procedures for dye tracing, by J.F. Wilson Jr.: USGS--TWRI Book 3, Chapter A12. 1968. 31 pages. 0.35. Not currently available.

3-B1. Aquifer-test design, observation, and data analysis, by R.W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages 0.70.

3-B2. Introduction to ground-water hydraulics-a programed text for self-instruction, by D.S. Bennett: USGS--TWRI Book 3, Chapter B2, 1976. 172 pages.

3-C1. Fluvial sediment concepts, by H.P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages. 0.65.

3-C2. Field methods for measurement of fluvial sediment, by H.P. Guy and V.W. Norman: USGS--TWRI Book 3, Chapter C2, 1970. 59 pages. 0.70.

3-C3. Computation of fluvial-sediment discharge, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages. 1.15.

4-A1. Some statistical tools in hydrology, by H.C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages. 0.30.

4-A2. Frequency curves, by H.C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages. 0.20.

4-B1. Low-flow investigations, by H.C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages. 0.65.

4-B2. Storage analyses for water supply, by H.C. Riggs and C.H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages. 0.75.

4-B3. Regional analyses of streamflow characteristics, by H.C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages. 0.75.

4-D1. Computation of rate and volume of stream depletion by wells, by C.T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages. 0.65.

5-A1. Methods for collection and analysis of water samples for dissolved minerals and gases, by Eugene Brown, M.W. Skougstad, and M.J. Fishman: USGS--TWRI Book 5, Chapter A1. 1970. 160 pages. 2.40.

5-A2. Determination of minor elements in water by emission spectroscopy, by P.R. Barnett and E.C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages. 0.80.

5-A3. Methods for analysis of organic substances in water, by D.F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages. 0.90.

5-A4. Methods for collection and analysis of aquatic biological and microbiological samples, by K.V. Slack, R.C. Averett, P.E. Greeson, and R.G. Lipscomb: USGS--TWRI Book 5, Chapter A4. 1973. 165 pages. 1.95.

5-C1. Laboratory theory and methods for sediment analysis, by H.P. Guy: USGS-TWRI Book 5, Chapter C1. 1969. 58 pages, 0.65.

7-C1. Finite-difference model for aquifer simulation in two dimensions with results of numerical experiments, by P.C. Trescott, G.F. Pinder, and S.P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.

8-A1. Methods of measuring water level in deep wells, by M.S. Garber and F.C. Koopman; USGS--TWRI Book 8, Chapter A1. 1968. 23 pages. 0.70.
8-B2. Calibration and maintenance of vertical-axis type current meters, by G.F. Smoot and C.E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages. 0.40.

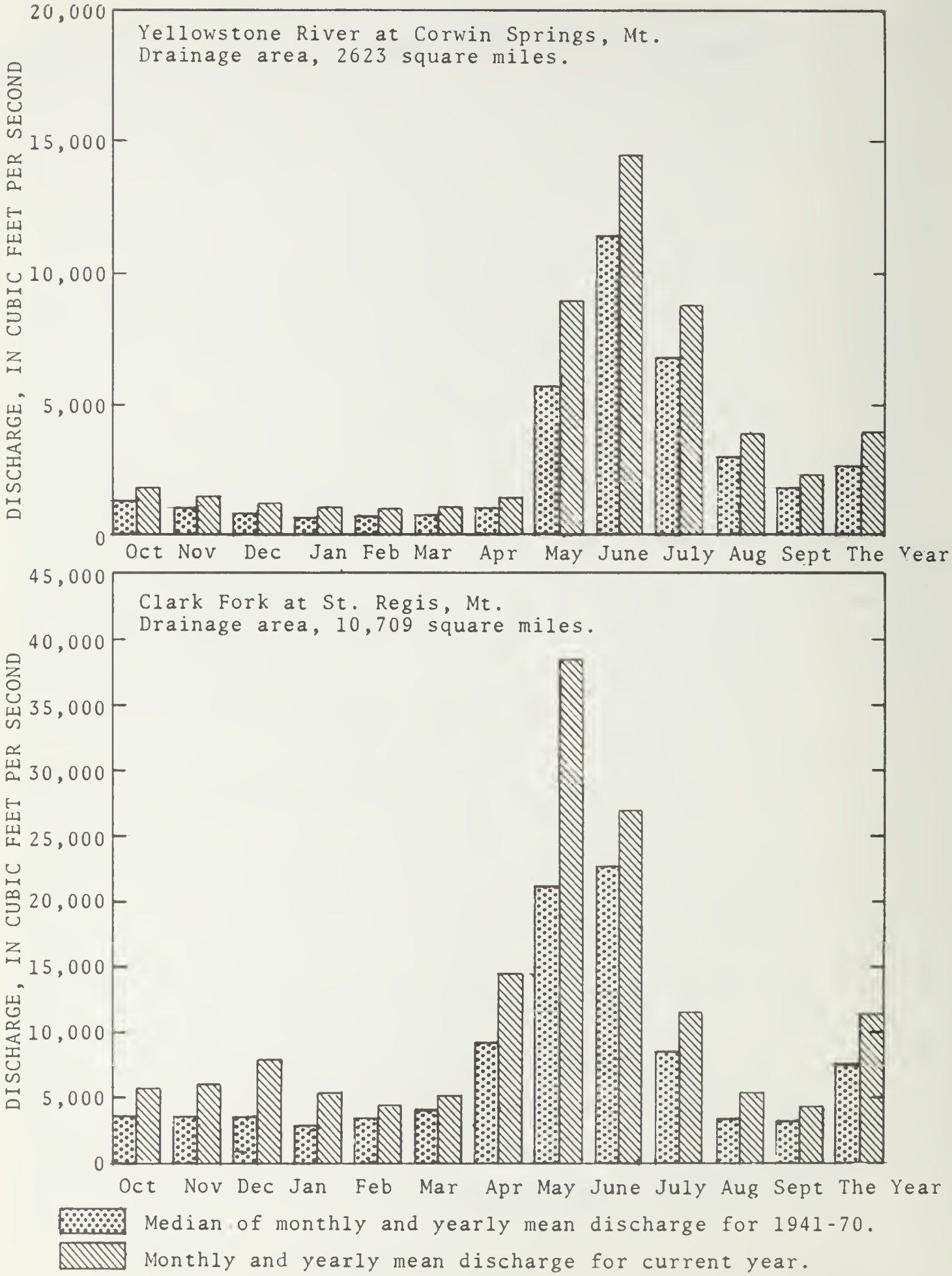


Figure 2.--Comparison of discharge at two long-term representative gaging stations during current year with medium discharge for period 1941-70.

Table 4.--Summary of flood stages and discharges during 1976.

Page No.	Permanent station number	Stream and place of determination	Drainage area (mi^2)	Period of Record	Max. previously known			Maximum in 1976				
					Year	Gage height (feet)	Discharge (ft^3/s)	Date	Gage height (feet)	Discharge ft^3/s	Discharge ft^3/s / mi^2	Magnitude
Part 6					Duval Creek basin							
	06115300	Duval Creek near Landusky	3.31	1963-76	1972	7.45	340	6-22	10.46	470	142	1
					Musselshell River basin							
	06120800	Antelope Creek tributary No. 2 near Harlowton	21.2	1956-76	1962	5.56	3,230	6-22	6.50	5,390	254	1
					Big Dry Creek basin							
	06130915	Russian Coulee near Jordan	3.45	1974-76	1974	3.85	135	6-22	4.57	175	50.7	1
	06130925	Thompson Creek tributary near Cohagen	1.23	1974-76	1974	5.30	272	8-9	6.21	510	415	1
					Tributary between Wolf Creek and Tule Creek							
	06176950	Missouri River tributary No. 6 near Wolf Point	0.08	1973-76	1973	4.90	28	3-19	5.51	34	425	1
					Redwater River basin							
	06177820	North Fork Creek tributary near Richey	0.74	1974-76	1974	3.35	42	3-18	3.71	54	73.0	1
					Big Muddy Creek basin							
	06183700	Middle Fork Big Muddy Creek near Flaxville	2.88	1972 1974-76	1972	3.32	a,b	3-18	3.89	142	49.3	1
	06184200	Lost Creek tributary near Homestead	1.90	1972 1974-76	c	3.48	b,d	6-11	12.60	1,260	663	1
	06185100	Big Muddy Creek tributary near Culbertson	7.38	1963-76	1963	9.6	676	6-11	8.66	317	36.6	3
					Tributaries between Big Muddy Creek and Yellowstone River							
	06185200	Missouri River tributary No. 3 near Culbertson	1.23	1963-76	1966	e	2,570	6-11	7.43	280	228	2
	06185300	Missouri River tributary No. 4 near Bainville	11.6	1963-76	1964	12.02	1,670	6-11	3.57	445	38.4	6
	06185400	Missouri River tributary No. 5 at Culbertson	3.67	1963-76	1963	6.60	495	6-11	10.52	1,320	360	1
					Yellowstone River basin							
	06296100	Snell Creek near Hathaway	10.5	1963-76	1966	2.35	380	6-7	2.49	410	39.0	1
	06307520	Canyon Creek near Birney	50.2	1972-76	1975	1.76	100	6-14	2.28	182	3.63	1
	06324995	Badger Creek at Biddle	6.06	1972-76	1972	4.89	185	6-23	7.97	414	68.3	1
	06325400	East Fork Little Powder River tributary near Hammond	3.45	1974-76	1974	4.19	51	6-23	6.18	155	44.9	1
	06326600	O'Fallon Creek near Ismay	669	1962-76	1972	8.87	4,100	7-3	9.50	4,700	7.03	1
	06326650	O'Fallon Creek tributary near Ismay	0.17	1962-76	1963, 64	5.27	59	7-3	5.29	59	347	1
	06329570	First Hay Creek near Sidney	29.1	1963-76	1972	2.32	325	6-14	2.93	700	24.1	1

See footnotes at end of table, p. 20.

Table 4.--Summary of flood stages and discharges during 1976--continued

Page No.	Permanent station number	Stream and place of determination	Drainage area (mi^2)	Period of Record	Max. previously known			Maximum in 1976				
					Year	Gage height (feet)	Discharge (ft^3/s)	Date	Gage height (feet)	Discharge		
										ft^3/s	ft^3/s mi^2	Magnitude
Part 12				Kootenai River basin								
	12301550	Pinkham Creek near Rexford	75.7	1972-76	1975	3.70	479	5-16	4.26	689	9.10	1
				Pend Oreille River basin								
	12345850	Sleeping Child Creek near Hamilton	62.6	1958-59 1972 1973-76	1972	6.25	d 1,500	5-14	4.95	825	13.2	2
	12391100	White Pine Creek near Trout Creek	8.75	1974-76	1974	4.70	295	12-4	4.80	310	35.4	1

a - Discharge not determined
b - Prior to installation of gage
c - Year and date unknown
d - About
e - Unknown

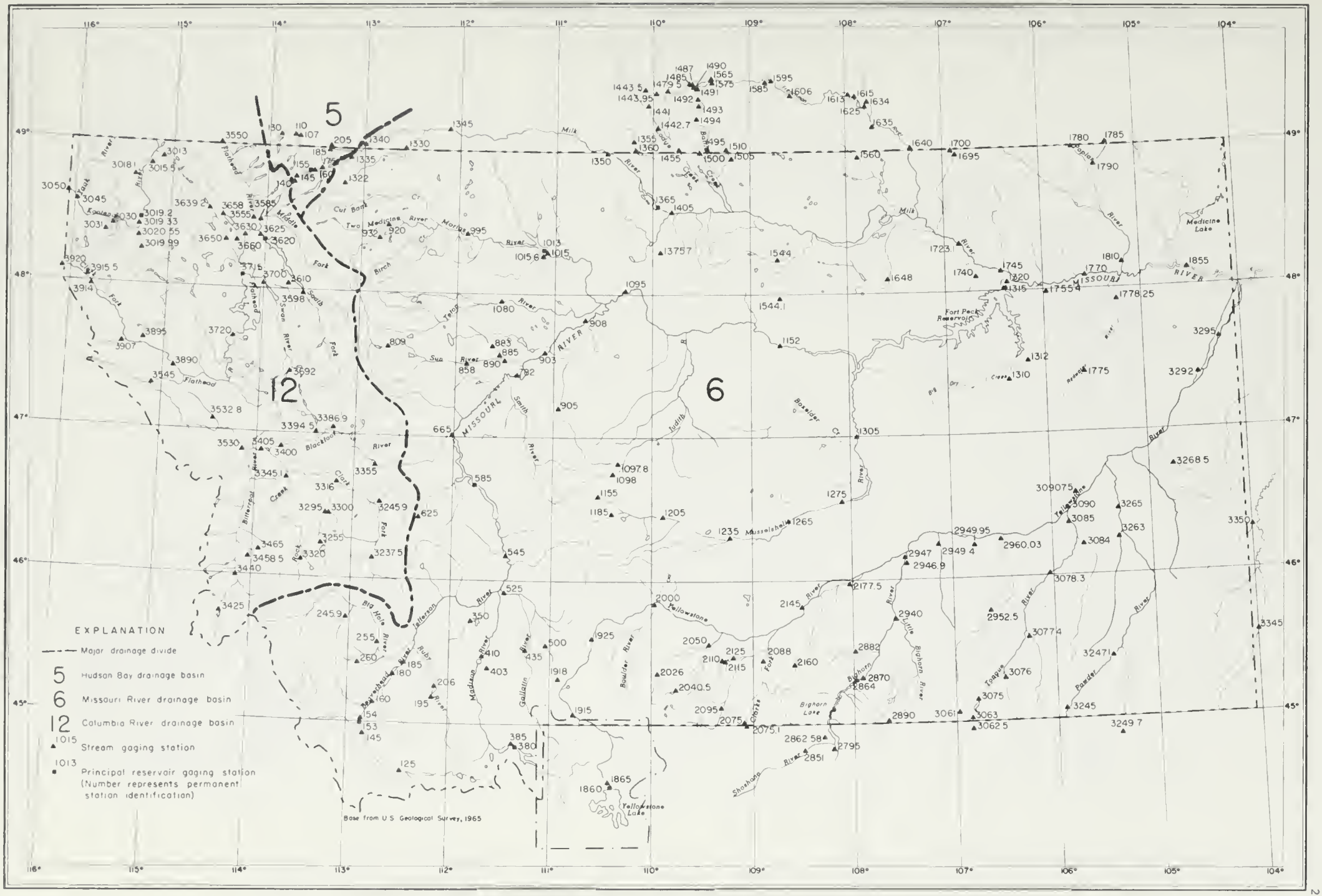


FIGURE 3.--LOCATION OF SURFACE--WATER GAGING STATIONS, 1976 WATER YEAR.

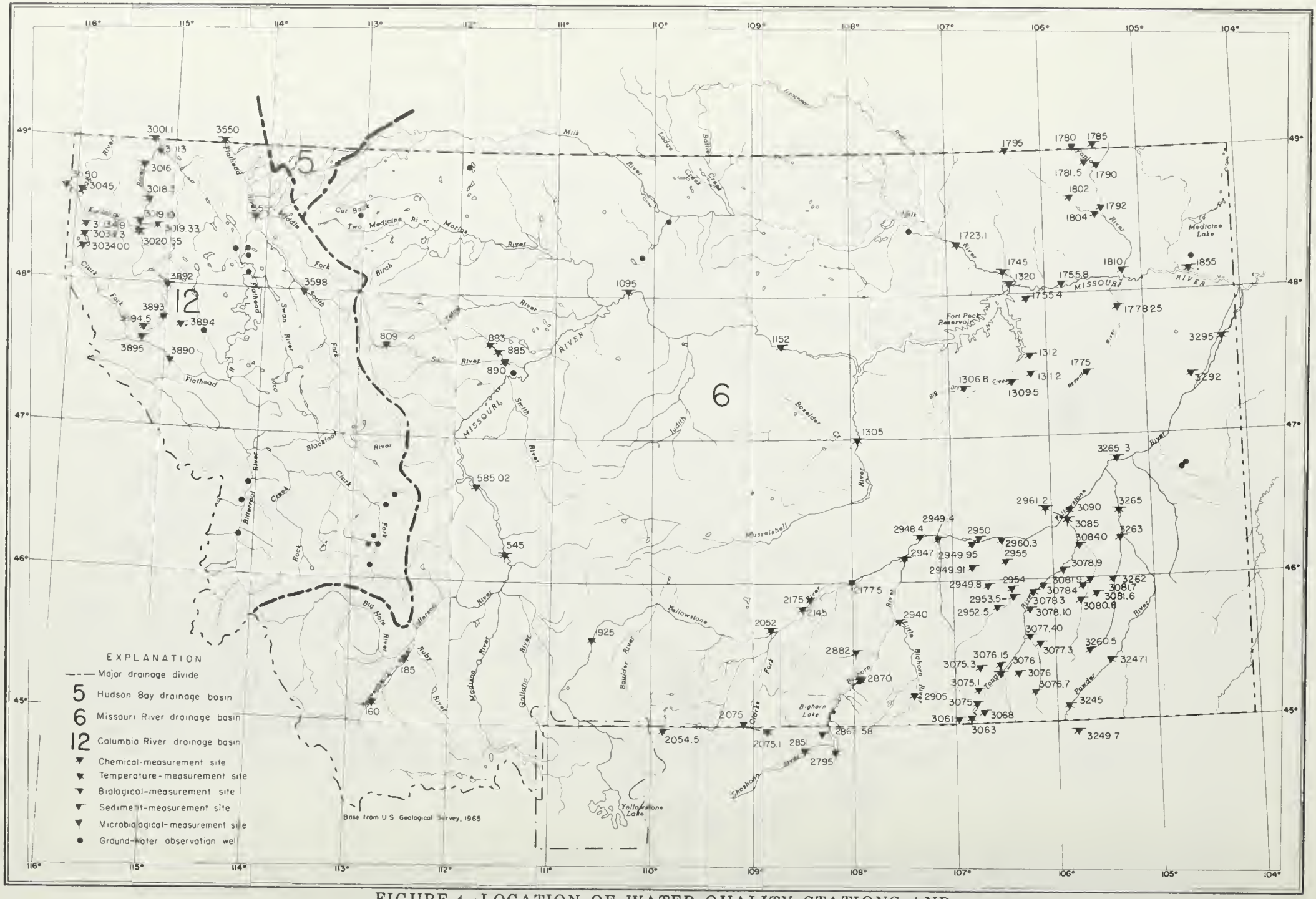


FIGURE 4.-LOCATION OF WATER-QUALITY STATIONS AND GROUND-WATER OBSERVATION WELLS, 1976 WATER YEAR.

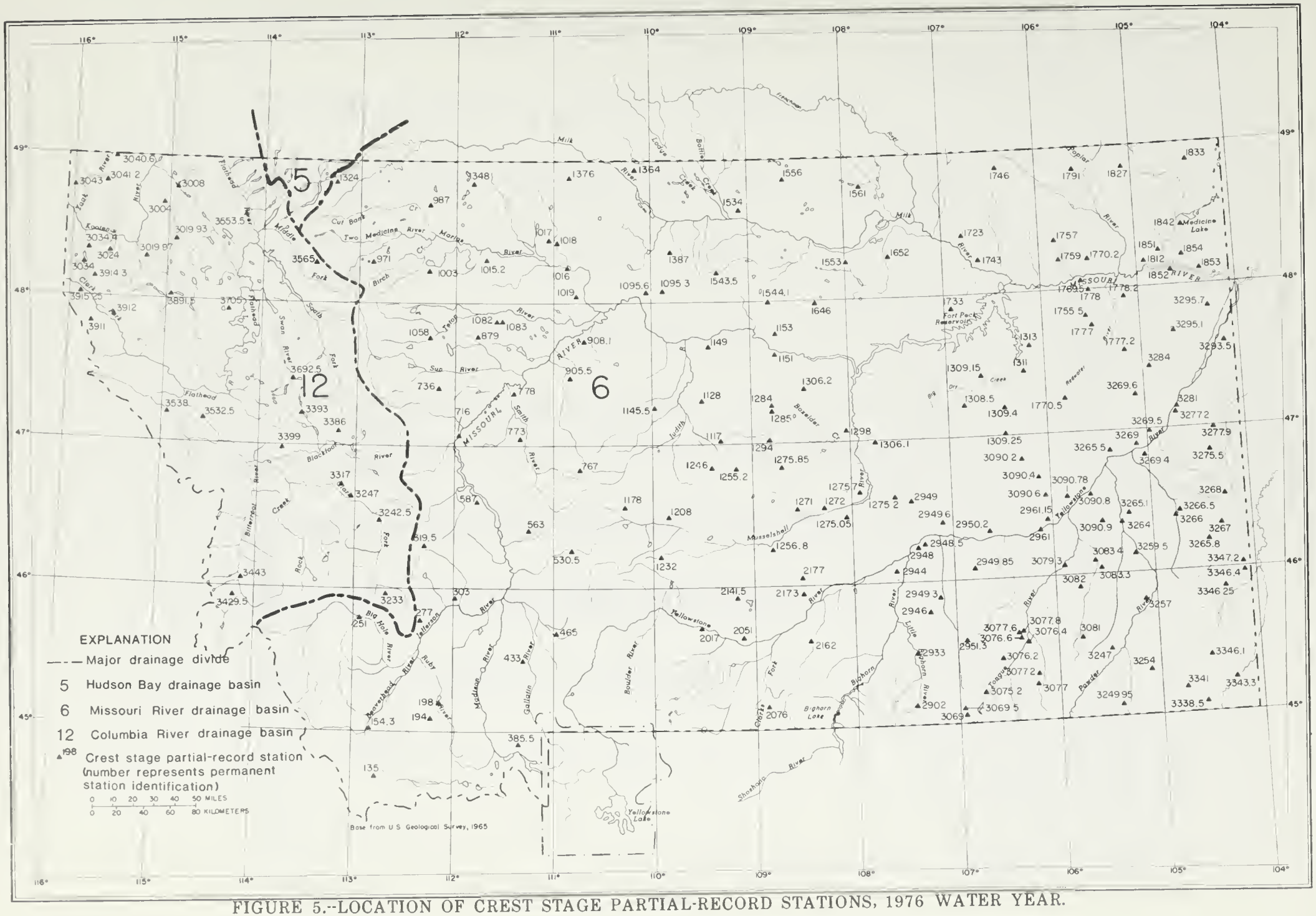


FIGURE 5.--LOCATION OF CREST STAGE PARTIAL-RECORD STATIONS, 1976 WATER YEAR.

HUDSON BAY BASIN

SASKATCHEWAN RIVER BASIN

05010700 MOUNTAIN VIEW IRRIGATION DISTRICT CANAL NEAR MOUNTAIN VIEW, ALBERTA

(International gaging station)

LOCATION.--Lat 49°05'58", long 113°41'34", in NW¼ sec.4, T.2, R.28 W., fourth meridian, in Alberta, Hydrologic Unit 10010001, on left bank 1.5 mi (2.4 km) downstream from headgate, 5 mi (8 km) southwest of Mountain View, and 7 mi (11 km north of international boundary.

PERIOD OF RECORD.--May 1935 to current season (seasonal records only). Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 4,377.26 ft (1,334.189 m) above mean sea level (Irrigation Surveys datum). Prior to May 12, 1950, nonrecording gage at site 600 ft (183 m) upstream at different datum. May 12, 1950, to May 22, 1952, nonrecording gages at sites 0.2 mi (0.3 km) upstream at different datums.

REMARKS.--Records good. Canal diverts water from Belly River on right bank for irrigation in Belly and St. Mary River basins in Alberta.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 187 ft^3/s (5.30 m^3/s) May 24, 1970; no flow at times each season.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				0	7.9	32	30	.88	61	39	.32	
2				0	6.0	31	29	.85	61	39	.30	
3				0	4.0	31	29	.71	61	39	.27	
4				.80	3.6	30	29	.80	61	53	.15	
5				1.6	6.4	29	29	1.8	60	77	.18	
6				2.4	7.1	30	42	1.4	61	75	.22	
7				3.2	4.6	30	55	1.0	52	74	.17	
8				3.8	3.9	28	56	1.1	44	74	.15	
9				3.3	4.0	30	55	19	43	73	.10	
10				3.1	4.3	34	51	63	42	71	.13	
11				3.0	3.7	41	45	62	42	70	.08	
12				2.7	3.3	41	46	61	42	70	0	
13				2.7	3.2	42	47	60	41	70	0	
14				2.3	4.7	42	45	59	40	70	0	
15				2.1	4.5	39	44	59	40	69	0	
16				2.1	3.5	41	42	60	40	68	0	
17				2.3	3.3	43	42	60	40	71	0	
18				2.6	2.6	40	42	59	40	69	0	
19				2.4	2.5	41	43	60	40	28	0	
20				2.2	2.7	42	43	65	39	1.3	0	
21				2.0	2.5	45	76	65	38	1.3	0	
22				2.1	2.6	43	104	65	38	1.3	0	
23				2.1	2.7	43	107	65	38	1.2	0	
24				1.8	2.6	42	118	66	38	1.2	0	
25				1.9	2.6	37	118	65	36	1.2	0	
26				1.8	2.4	31	116	65	40	1.1	0	
27				2.5	2.2	29	52	65	40	.95	0	
28				3.0	20	29	.99	64	39	.90	0	
29				3.2	32	29	.92	63	39	.85	0	
30				6.5	33	29	1.1	62	39	.83	0	
31				---	33	---	1.0	62	---	.56	---	
TOTAL				69.50	221.4	1074	1539.01	1402.54	1335	1211.69	2.07	
MEAN				2.32	7.14	35.8	49.6	45.2	44.5	39.1	.069	
MAX				6.5	33	45	118	66	61	77	.32	
MIN				0	2.2	28	.92	.71	36	.56	0	
AC-FT				138	439	2130	3050	2780	2650	2400	4.1	

THE SEASON APRIL TO NOVEMBER AC-FT 13,600

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

05011000 BELLY RIVER NEAR MOUNTAIN VIEW, ALBERTA

(International gaging station)

LOCATION.--Lat 49°06'00", long 113°41'48", in NE¼ sec.5, T.2, R.28 W., fourth meridian, in Alberta, Hydrologic Unit 10010001, on right bank 2 mi (3 km) downstream from intake of Mountain View Irrigation District Canal, 5 mi (8 km) southwest of Mountain View, and 7 mi (11 km) north of international boundary.

DRAINAGE AREA.--121 mi^2 (313 km^2).

PERIOD OF RECORD.--November 1911 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 4,342.88 ft (1,323.710 m) above mean sea level (Irrigation Surveys datum), revised. November 1911 to Apr. 6, 1949, nonrecording gage at site 20 ft (6 m) upstream at same datum. Apr. 7, 1949, to June 19, 1975, water-stage recorder at present site at datum 2.02 ft (0.616 m) higher.

REMARKS.--Records good except those for winter period, which are fair. Natural flow of stream affected by diversion to Mountain View Irrigation District Canal 2 mi (3 km) upstream from station (see preceding page).

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

AVERAGE DISCHARGE.--22 years (1912-34), prior to operation of Mountain View Irrigation District Canal, 327 ft^3/s (9.261 m^3/s), 236,700 acre-ft/yr (292 hm^3/yr); 42 years (1934-76), 311 ft^3/s (8.808 m^3/s), 225,300 acre-ft/yr (278 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,400 ft^3/s (464 m^3/s) June 8, 1964, gage height, 11.40 ft (3.475 m), from floodmarks, datum then in use; maximum gage height, 12.13 ft (3.697 m) June 20, 1975, from floodmarks; minimum discharge, 0.50 ft^3/s (0.014 m^3/s) Oct. 22, 1963, result of upstream diversion.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,730 ft^3/s (49.0 m^3/s) May 11, gage height, 5.28 ft (1.609 m); minimum, 35 ft^3/s (0.991 m^3/s) Apr. 2, gage height, 2.50 ft (0.780 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	113	195	310	95	101	75	79	263	704	910	451	216
2	109	185	357	101	84	69	65	332	660	890	444	214
3	109	222	409	108	72	62	70	447	621	797	451	209
4	167	283	453	114	80	72	76	588	567	760	459	202
5	226	339	652	112	89	86	84	765	512	764	535	197
6	239	378	603	108	80	89	94	800	504	757	534	200
7	302	365	480	104	70	93	117	846	509	798	519	215
8	298	336	442	95	65	88	148	983	502	887	518	213
9	276	305	425	86	61	86	190	1270	643	911	513	193
10	259	258	447	89	56	80	234	1450	802	847	465	174
11	249	245	480	95	55	77	290	1690	835	759	474	156
12	232	219	414	101	55	75	366	1520	822	770	459	149
13	217	196	352	93	72	75	425	1290	800	815	436	140
14	201	181	276	97	101	77	424	1450	734	776	407	131
15	196	192	230	101	97	80	402	1360	656	709	399	125
16	181	190	200	106	86	82	376	1130	703	661	399	122
17	188	190	190	116	77	84	334	1000	784	639	402	124
18	193	164	193	108	86	88	306	952	754	643	360	134
19	211	141	197	99	108	80	281	897	819	662	324	134
20	229	141	200	101	101	73	258	918	980	659	325	129
21	226	147	204	106	80	65	241	870	1010	620	326	127
22	218	150	204	99	65	61	227	838	925	570	317	123
23	216	153	190	93	56	59	214	865	884	532	322	120
24	201	147	164	88	52	65	206	957	855	499	317	119
25	190	136	136	93	73	58	209	1030	820	489	312	124
26	189	133	131	99	91	62	195	969	732	474	331	119
27	177	131	131	108	88	67	255	856	653	495	306	116
28	171	128	133	114	80	91	212	930	620	544	279	112
29	168	147	138	121	79	79	196	919	649	515	249	107
30	170	219	106	124	---	73	214	828	755	504	232	106
31	181	---	91	128	---	76	---	746	---	481	221	---
TOTAL	6300	6220	8940	3202	2260	2347	6788	29759	21794	21137	12086	4550
MEAN	203	207	288	103	77.9	75.7	226	960	726	682	390	152
MAX	302	378	652	128	108	93	425	1690	1010	911	535	216
MIN	109	128	91	86	52	58	65	263	502	474	221	106
AC-FT	12500	12340	17730	6350	4480	4660	13460	59030	43230	41930	23970	9020

CAL YR 1975 TOTAL 179534 MEAN 492 MAX 11700 MIN 33 AC-FT 356100
WTR YR 1976 TOTAL 125382 MEAN 343 MAX 1690 MIN 52 AC-FT 248700

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

05013000 WATERTON RIVER NEAR WATERTON PARK, ALBERTA

(International gaging station)

LOCATION.--Lat 49°06'47", long 113°50'18", in NE¼ sec.8, T.2, R.29 W., fourth meridian, in Alberta, Hydrologic Unit 10010001, on right bank 300 ft (91 m) downstream from highway bridge, 0.3 mi (0.5 km) upstream from Crooked Creek, and 5.3 mi (8.5 km) northeast of Waterton Park.

DRAINAGE AREA.--238 mi^2 (616 km^2).

PERIOD OF RECORD.--June to September 1908, April to November 1909, April to November 1910, May to October 1911, March 1912 to May 1931, September 1932, June to August 1933, April 1948 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1308: 1908(M).

GAGE.--Water-stage recorder. Datum of gage is 4,154.19 ft (1,266.197 m) above mean sea level (Irrigation Surveys datum). Prior to Feb. 7, 1917, nonrecording gages at various sites and datums within 200 ft (61 m) of present site. Feb. 7, 1917, to Aug. 26, 1933, and Mar. 19, 1948, to Mar. 18, 1949, nonrecording gage on downstream side of old bridge 200 ft (61 m) upstream at present datum.

REMARKS.--Records good except those for winter period, which are fair. No regulation or diversions.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

AVERAGE DISCHARGE.--46 years (1912-30, 1948-76), 680 ft^3/s (19.26 m^3/s), 38.80 in/yr (986 mm/yr), 492,700 acre-ft/yr (607 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,700 ft^3/s (728 m^3/s) June 9, 1964, gage height, 9.22 ft (2.810 m); minimum observed, 14 ft^3/s (0.40 m^3/s) Feb. 4, 1955, caused by temporary storage behind ice jam upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,680 ft^3/s (104 m^3/s) May 12, gage height, 3.76 ft (1.146 m); minimum, 31 ft^3/s (0.88 m^3/s) Feb. 26, gage height, 0.42 ft (0.128 m), caused by temporary storage behind ice jam upstream.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	212	346	256	262	177	131	104	469	1980	1980	695	448
2	198	339	256	227	156	124	106	522	1820	2080	677	426
3	205	396	329	206	193	120	109	636	1660	2000	667	398
4	213	379	486	206	188	114	108	837	1510	1920	678	383
5	224	360	609	194	155	98	108	1110	1360	1880	719	367
6	227	435	669	183	160	153	115	1370	1270	1870	698	358
7	273	463	668	180	160	146	141	1580	1220	1880	722	352
8	301	495	882	178	170	138	159	1820	1190	1990	736	347
9	309	480	657	180	171	138	208	2200	1340	2060	809	335
10	321	462	658	175	157	139	265	2710	1650	2000	870	320
11	327	472	617	188	172	135	328	3440	1900	1880	918	296
12	335	602	598	185	150	151	449	3560	1980	1790	915	296
13	344	462	579	180	146	133	593	3250	1970	1820	870	284
14	376	467	532	183	148	126	726	3190	1900	1750	831	273
15	368	395	468	160	149	124	759	3160	1760	1630	849	256
16	362	365	443	194	153	127	762	2830	1650	1500	884	252
17	348	376	468	206	148	135	752	2620	1750	1410	846	250
18	335	366	513	215	158	136	722	2450	1830	1350	761	248
19	360	346	394	219	136	134	683	2280	1950	1310	744	248
20	370	326	367	212	154	125	650	2310	2130	1270	739	240
21	372	339	349	209	164	125	613	2170	2290	1230	691	233
22	371	312	327	212	156	129	552	2030	2320	1150	662	223
23	371	284	312	191	137	132	538	2010	2250	1070	652	218
24	397	295	303	191	133	119	510	2130	2190	1020	644	213
25	385	295	303	175	134	125	476	2340	2090	971	624	211
26	371	284	280	188	115	118	469	2370	1910	917	646	206
27	350	282	277	197	158	118	514	2180	1700	863	591	205
28	368	252	290	183	150	110	501	2250	1530	836	549	199
29	405	240	290	196	145	115	481	2390	1490	790	507	204
30	349	262	252	187	---	122	464	2310	1650	780	486	186
31	374	---	267	182	---	112	---	2140	---	740	464	---
TOTAL	10121	11182	13499	6064	4473	3950	12965	66664	53220	45717	22144	8475
MEAN	328	373	435	196	154	127	432	2150	1774	1475	714	283
MAX	405	602	682	262	193	153	762	3560	2320	2080	918	448
MIN	198	240	252	175	115	98	104	469	1190	740	464	186
AC-FT	20070	22180	26780	12030	8870	7830	25720	132200	105600	90680	43920	16810

CAL YR 1975 TOTAL 328295 MEAN 899 MAX 16500 MIN 56 AC-FT 651200
WTR YR 1976 TOTAL 258474 MEAN 706 MAX 3560 MIN 98 AC-FT 512700

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

05014000 GRINNELL CREEK NEAR MANY GLACIER, MT

LOCATION.--Lat 48°46'14", long 113°41'53", in SE¼ sec.21, T.35 N., R.16 W., (unsurveyed), Glacier National Park, Hydrologic Unit 10010002, on right bank 600 ft (183 m) upstream from trail crossing, 900 ft (274 m) downstream from Grinnell Lake, 0.3 mi (0.5 km) upstream from mouth, 2.6 mi (4.2 km) southwest of Many Glacier, and 13.5 mi (21.7 km) southwest of Babb.

DRAINAGE AREA.--3.32 mi^2 (8.60 km^2).

PERIOD OF RECORD.--August 1949 to current year.

REVISED RECORDS.--WSP 1228: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,920 ft (1,500 m), from topographic map. Prior to Oct. 12, 1949, nonrecording gages at various sites and datums.

REMARKS.--Records good except those for winter period, which are poor. No gage-height record Mar. 2 to Apr. 6. No regulation or diversion. Since 1964, some inflow from cataract Creek has entered above gage during high-water periods in some years.

AVERAGE DISCHARGE.--27 years, 26.1 ft^3/s (0.739 m^3/s), 106.76 in/yr (2,711.7 mm/yr), 18,910 acre-ft/yr (23.1 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 540 ft^3/s (15.3 m^3/s) June 19, 1975, gage height, 4.90 ft (1.494 m), from rating curve extended above 219 ft^3/s (6.20 m^3/s) on basis of 1964 slope-area measurement of peak flow; minimum, probably less than 0.20 ft^3/s (0.006 m^3/s) at times in winter periods.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft^3/s (2.83 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 11	1430	*200	5.66	*2.88	0.878	July 8	2345	117	3.31	2.28	0.695
June 20	0600	111	3.14	2.24	0.683	July 13	0100	130	3.68	2.37	0.722
July 1	0200	114	3.23	2.25	0.686						

Minimum daily discharge, 0.40 ft^3/s (0.011 m^3/s) Feb. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	8.9	6.0	2.0	1.8	.50	2.0	12	45	101	50	36
2	11	13	12	3.0	2.3	.50	2.0	22	41	75	56	36
3	12	36	26	3.0	1.5	.50	2.5	37	37	70	59	34
4	31	41	33	3.0	.50	.50	2.5	52	32	72	63	32
5	28	36	26	3.0	.40	.50	2.5	49	29	76	65	32
6	32	28	19	2.5	.50	.50	2.5	53	32	85	60	34
7	35	23	13	2.0	.50	1.0	2.8	56	33	97	64	32
8	27	18	11	2.5	.50	1.5	5.0	76	37	110	63	26
9	21	14	17	3.0	.50	2.0	11	108	68	107	69	20
10	18	12	18	3.0	.50	3.0	23	116	81	90	80	18
11	19	10	14	3.0	.50	3.0	40	168	75	86	69	18
12	18	8.5	11	3.5	.50	2.0	40	96	70	102	61	21
13	16	7.1	8.9	3.0	.50	1.0	35	73	59	121	54	19
14	13	6.8	7.8	3.0	.50	1.0	26	100	48	102	49	18
15	13	8.9	7.8	3.5	.50	1.0	19	68	44	86	52	19
16	13	10	6.5	3.9	.50	2.0	16	53	59	81	62	19
17	11	8.9	5.2	5.4	1.0	3.0	13	55	63	81	50	20
18	12	7.4	4.3	12	1.0	3.0	11	55	63	83	38	21
19	15	7.1	4.1	9.7	1.0	2.0	10	53	84	85	34	19
20	19	6.8	3.7	7.4	1.5	1.5	9.3	60	106	79	43	17
21	16	6.3	3.3	6.3	3.0	2.0	9.7	52	90	80	46	16
22	14	5.2	3.1	5.2	3.0	3.0	8.1	49	71	71	42	16
23	13	5.2	2.9	4.0	2.5	2.5	7.4	55	79	68	45	17
24	11	5.2	2.9	3.0	2.0	2.0	7.1	74	80	70	46	18
25	9.3	5.0	2.8	1.5	1.0	1.5	8.9	80	65	74	46	20
26	9.7	4.5	2.8	1.5	1.0	1.5	8.9	57	49	80	48	18
27	8.9	4.1	3.0	1.5	.50	1.5	8.1	54	41	74	39	16
28	8.5	3.9	3.3	1.5	.50	1.5	7.4	90	44	63	33	17
29	7.8	4.1	2.6	1.5	.50	1.5	6.8	70	58	57	33	19
30	8.5	4.0	2.4	1.8	---	2.0	7.1	49	65	52	34	21
31	10	---	2.4	1.8	---	2.0	---	45	---	48	36	---
TOTAL	490.7	358.9	285.8	111.0	30.50	51.00	354.6	2037	1768	2526	1589	669
MEAN	15.8	12.0	9.22	3.58	1.05	1.65	11.8	65.7	58.9	81.5	51.3	22.3
MAX	35	41	33	12	3.0	3.0	40	168	106	121	80	36
MIN	7.8	3.9	2.4	1.5	.40	.50	2.0	12	29	48	33	16
CFSM	4.76	3.61	2.78	1.08	.32	.50	3.55	19.8	17.7	24.5	15.5	6.72
IN.	5.50	4.02	3.20	1.24	.34	.57	3.97	22.82	19.80	28.29	17.80	7.49
AC-FT	973	712	567	220	60	101	703	4040	3510	5010	3150	1330

CAL YR 1975 TOTAL 11588.90 MEAN 31.8 MAX 409 MIN .50 CFSM 9.58 IN 129.81 AC-FT 22990
WTR YR 1976 TOTAL 10271.50 MEAN 28.1 MAX 168 MIN .40 CFSM 8.46 IN 115.06 AC-FT 20370

05014500 SWIFTCURRENT CREEK AT MANY GLACIER, MT

(Hydrologic bench-mark station)

LOCATION.--Lat 48°47'57", long 113°39'21", in SE¼ sec.11, T.35 N., R.16 W., (unsurveyed), Glacier County, Hydrologic Unit 10010002, Glacier National Park, on right bank 100 ft (30 m) upstream from outlet of Swiftcurrent Lake at Many Glacier, and 11 mi (18 km) southwest of Babb.

DRAINAGE AREA.--30.9 mi^2 (80.0 km^2), revised.

PERIOD OF RECORD.--June 1912 to current year (records incomplete most years prior to 1959). Published as "at McDermott Lake" 1912-14. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1508: 1918(M), 1943.

GAGE.--Water-stage recorder. Datum of gage is 4,876.78 ft (1,486.443 m), above mean sea level (revised). Prior to May 23, 1916, nonrecording gage on left bank of lake opposite present gage, May 23, 1916, to June 15, 1918, nonrecording gage at present site, and June 16, 1918, to Sept. 30, 1975, water-stage recorder at present site, all at datum 9.45 ft (2.880 m) lower.

REMARKS.--Records good. No regulation or diversion.

AVERAGE DISCHARGE.--20 years, (1917-19, 1958-76), 148 ft^3/s (4.191 m^3/s), 65.04 in/yr (1,652 mm/yr), 107,200 acre-ft/yr (132 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,700 ft^3/s (190 m^3/s) June 8, 1964, gage height, 10.00 ft (3.048 m) from floodmarks, from rating curve extended above 1,100 ft^3/s (31.2 m^3/s) on basis of computation of peak flow over dam; minimum, 6.2 ft^3/s (0.18 m^3/s) Mar. 17, 1975, gage height, 1.35 ft (0.411 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,010 ft^3/s (28.6 m^3/s) May 11, gage height, 4.53 ft (1.381 m); minimum, 10 ft^3/s (0.28 m^3/s) Mar. 24, gage height, 1.43 ft (0.436 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	74	37	29	30	21	20	84	309	504	169	118
2	39	79	57	25	28	20	24	143	279	423	184	117
3	44	221	192	25	29	17	25	248	248	364	195	112
4	116	288	378	28	25	17	25	386	214	362	203	106
5	184	289	295	30	22	17	27	430	191	382	214	100
6	198	253	187	28	25	17	29	434	201	398	196	108
7	247	213	140	25	25	17	41	465	212	428	205	109
8	215	170	115	27	23	17	69	560	222	494	206	99
9	174	140	142	28	19	17	100	711	360	503	222	82
10	150	120	171	29	16	18	128	732	486	426	284	70
11	142	104	144	27	14	17	171	933	460	373	271	64
12	134	89	119	28	14	16	209	709	417	394	236	67
13	121	80	94	28	16	13	233	533	374	481	211	63
14	108	73	81	27	20	14	214	668	309	423	189	60
15	100	86	77	26	19	15	221	560	265	351	181	57
16	93	104	75	35	18	15	158	417	312	314	213	57
17	86	94	67	50	20	16	125	398	374	313	215	58
18	76	78	59	81	20	18	103	402	370	321	169	60
19	87	68	55	80	25	17	91	375	424	329	146	61
20	102	65	53	73	39	14	81	412	536	305	173	59
21	93	58	51	65	46	14	77	374	523	304	219	56
22	92	57	46	55	31	13	71	343	419	290	205	53
23	84	54	42	48	24	13	63	361	410	261	192	50
24	82	55	39	45	28	11	61	447	429	254	186	50
25	76	53	38	35	29	12	70	523	394	254	180	54
26	74	47	38	33	28	12	71	437	309	261	198	54
27	69	45	40	31	28	13	69	360	248	265	175	51
28	66	44	34	32	25	14	64	489	250	235	146	48
29	66	41	31	35	22	15	60	476	304	209	127	48
30	66	36	37	35	---	15	60	362	404	201	122	47
31	81	---	30	33	---	16	---	317	---	177	120	---
TOTAL	3313	3178	2964	1176	708	481	2760	14089	10253	10599	5952	2138
MEAN	107	106	95.6	37.9	24.4	15.5	92.0	454	342	342	192	71.3
MAX	247	289	378	81	46	21	233	933	536	504	284	118
MIN	39	36	30	25	14	11	20	84	191	177	120	47
CFSM	3.46	3.43	3.09	1.23	.79	.50	2.98	14.7	11.1	11.1	6.21	2.31
IN.	3.99	3.83	3.57	1.42	.85	.58	3.32	16.96	12.34	12.76	7.17	2.57
AC-FT	6570	6300	5880	2330	1400	954	5470	27950	20340	21020	11810	4240

CAL YR 1975 TOTAL 64809.5 MEAN 176 MAX 2610 MIN 7.3 CFSM 5.76 IN 78.02 AC-FT 128500
WTR YR 1976 TOTAL 57611.0 MEAN 157 MAX 933 MIN 11 CFSM 5.08 IN 69.35 AC-FT 114300

05015500 LAKE SHERBURNE AT SHERBURNE, MT

(International gaging station)

LOCATION.--Lat 48°49'42", long 113°31'16", in SE¼SE¼SE¼ sec.35, T.36 N., R.15 W., Glacier County, Hydrologic Unit 10010002, in gatehouse at dam on Swiftcurrent Creek, 4.5 mi (7.2 km) southwest of Babb.

DRAINAGE AREA.--63.7 mi^2 (165 km^2).

PERIOD OF RECORD.--May 1915 to September 1923 (fragmentary), May 1924 to September 1925, November 1925 to June 1926, September 1926 to March 1936 (no winter records some years), May 1936 to September 1952 (monthend contents and daily elevations). October 1952 to current year (monthend contents only). Monthend contents for some periods, published in WSP 1308. Published as Sherburne Lake Reservoir at Sherburne 1915, 1917-28, 1931-52, and as Sherburne Lake Reservoir near Babb 1929-30.

REVISED RECORDS.--WSP 1338: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,709.45 ft (1,435.440 m) above mean sea level. Prior to May 7, 1931, nonrecording gage at present site, and May 8, 1931, to Sept. 30, 1974, water-stage recorder at present site and datum (corrected).

REMARKS.--Reservoir is formed on natural lake by earthfill dam completed in 1921. Prior to 1919, flashboards on a temporary dam provided limited storage. Storage behind main dam began in 1919. The following capacity figures are from capacity table effective Oct. 1, 1975; see previous reports for superseded figures. Capacity 66,400 acre-ft (81.9 hm^3) between gage height 26 ft (7.9 m), 6 ft (1.8 m) above lowest outlet gate sill, and 88.00 ft (26.822 m), spillway crest. Streambed above gates prevents withdrawal of storage to sill elevation. Dead storage, 1,590 acre-ft (1.96 hm^3) below gage height, 26.00 ft (7.925 m). Figures given herein represent usable contents. Water is used for irrigation on Milk River project of Bureau of Reclamation.

COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 66,780 acre-ft (82.3 hm^3) July 14, 1972 (gage height, 88.34 ft or 26.926 m), by capacity table dated Dec. 1, 1929; by capacity table dated Oct. 1, 1975, maximum contents, 68.030 acre-ft (83.9 hm^3) July 14, 1976 (gage height, 88.02 ft or 26.828 m); no usable contents at times.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 68,030 acre-ft (83.9 hm^3) July 14 (gage height, 88.02 ft or 26.828 m); minimum, 6,600 acre-ft (8.14 hm^3) Oct. 19 (gage height, 34.73 ft or 10.586 m).

MONTHEND GAGE HEIGHT AND CONTENTS AT 2400, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Gage height (feet)	Contents (acre-feet)	Change in Contents (acre-feet)
Sept. 30	35.44	7,100	--
Oct. 31	37.94	8,930	+ 1,830
Nov. 30	49.11	18,440	+ 9,510
Dec. 31	59.11	28,660	+10,220
CAL YR 1975			+11,400
Jan. 31	63.16	33,220	+ 4,560
Feb. 29	65.40	35,830	+ 2,610
Mar. 31	66.82	37,520	+ 1,690
Apr. 30	71.75	43,720	+ 6,200
May 31	78.07	52,620	+ 8,900
June 30	84.16	61,910	+ 9,290
July 31	86.68	65,890	+ 3,980
Aug. 31	73.57	46,200	-19,690
Sept. 30	40.50	10,920	-35,280
WTR YR 1976			+ 3,820

05016000 SWIFTCURRENT CREEK AT SHERBURNE, MT

(International gaging station)

LOCATION.--Lat 48°49'49", long 113°30'59", in NW¼SW¼SW¼ sec.36, T.36 N., R.15 W., Glacier County, Hydrologic Unit 10010002, on left bank 1,200 ft (366 m) downstream from outlet of Lake Sherburne Dam at Sherburne and 4.2 mi (6.8 km) southwest of Babb.

DRAINAGE AREA.--64.3 mi^2 (167 km^2).

PERIOD OF RECORD.--July 1912 to November 1915 (no winter records), March 1916 to October 1923, May 1924 to current year (no winter records). Monthly discharge only for some periods, published in WSP 1308, 1728. Published as "at Sherburne Lake" 1912-14.

REVISED RECORDS.--WSP 1388: Drainage area. WSP 1508: 1935.

GAGE.--Water-stage recorder. Datum of gage is 4,730.26 ft (1,441.783 m) above mean sea level (revised). Prior to Aug. 10, 1920, nonrecording gages at two sites within 1,000 ft (305 m) of present site at different datums. Aug. 10, 1920, to May 17, 1921, nonrecording gage at present site and May 18, 1921, to Sept. 30, 1975, water-stage recorder at present site and datum (corrected).

REMARKS.--Records good. Flow regulated by Lake Sherburne (see preceding page). No diversions.

COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

AVERAGE DISCHARGE.--7 years (1916-23), 199 ft^3/s (5.636 m^3/s), 144,200 acre-ft/yr (178 hm^3/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,420 ft^3/s (68.5 m^3/s) June 25, 1969, gage height, 7.63 ft (2.326 m); maximum gage height, 7.75 ft (2.362 m) June 21, 1975; no flow at times when gates in dam were closed.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 964 ft^3/s (27.3 m^3/s) May 12, gage height, 5.89 ft (1.795 m); no flow Oct. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10		---		---	.40	.65	187	529	243	532	679
2	0		---		---	.40	.62	187	383	244	531	674
3	116		---		---	.40	.69	189	345	241	530	669
4	220		---		---	.40	.79	248	345	238	559	664
5	240		---		---	.45	.92	478	345	243	577	660
6	227		---		---	.45	1.1	590	345	244	577	654
7	258		---		---	.45	1.5	594	345	245	576	649
8	279		---		---	.45	1.6	606	341	247	573	664
9	258		---		†.50	.45	1.7	696	343	248	573	729
10	239		---		---	.45	2.0	775	325	287	572	778
11	219		---		---	.45	2.1	839	311	504	568	784
12	209		---		---	.45	2.2	937	312	487	568	773
13	196		---		---	.45	2.2	800	313	499	595	762
14	195		---		---	.31	32	679	313	521	612	751
15	176		---		---	.50	53	680	314	538	610	740
16	161		---		---	.40	84	681	292	537	608	731
17	143		†.25		.40	.59	107	569	278	505	605	741
18	142		---		.40	.62	107	361	278	483	600	742
19	141		---		.40	.51	107	262	278	424	630	731
20	147		---		.35	.56	107	264	278	318	643	738
21	151		---		.40	.50	107	264	279	283	641	737
22	155		---		.40	.58	107	265	280	331	639	743
23	86		---		.40	.56	107	267	280	346	660	738
24	1.3		---		.45	.55	107	489	281	353	673	744
25	1.4		---		.45	.48	107	627	283	350	692	739
26	1.3		---		.45	.60	150	628	283	376	705	720
27	1.3		---		.40	.50	185	627	283	420	701	774
28	1.3		---		.40	.57	185	625	257	476	697	788
29	1.4		---		.40	.46	185	627	239	520	692	754
30	1.4		---		---	.66	187	628	239	536	688	759
31	1.3		---		---	.72	---	627	---	534	684	---
TOTAL	4028.80		---	---	---	15.32	2042.07	16296	9317	11821	19111	21809
MEAN	130		---	---	---	.49	68.1	526	311	381	616	727
MAX	280		---	---	---	.72	187	937	529	538	705	788
MIN	0		---	---	---	.31	.62	187	239	238	530	649
AC-FT	7990		---	---	---	30	4050	32320	18480	23450	37910	43260
MEAN†	161					28.0	172	675	469	452	298	137
CFSM†	250					.44	2.67	10.5	7.29	7.03	4.63	2.13
IN†	2.88					.50	2.99	12.10	8.14	8.10	5.34	2.37
AC-FT†	9874					1720	10256	41505	27926	27783	18324	8136

† Adjusted for change in contents and evaporation in Lake Sherburne.

05017500 ST. MARY RIVER NEAR BABB, MT

LOCATION.--Lat 48°50'00", long 113°25'08", in NW¼NW¼SE¼ sec.34, T.36 N., R.14 W., Glacier County, Hydrologic Unit 10010002, on right bank 0.7 mi (1.1 km) upstream from outlet of Lower St. Mary Lake and 2.0 mi (3.2 km) southeast of Babb.

DRAINAGE AREA.--278 mi^2 (720 km^2).

PERIOD OF RECORD.--July 1901 to October 1902, May 1910 to September 1925, October 1950 to current year. Monthly discharge only for some periods, published in WSP 1308. Published as "at Main" 1901-2, and as "below Swiftcurrent Creek, at Babb" 1910-15. Records for April 1902 to September 1915, May 1929 to September 1950 at sites about 1.5 mi (2.4 km) downstream not equivalent because flow of Swiftcurrent Creek not included 1905-15 and because diversion by St. Mary Canal not included 1929-50.

REVISED RECORDS.--WSP 1308: 1913-14, 1920, 1922-24. WSP 1508: 1902.

GAGE.--Water-stage recorder. Datum of gage is 4,468.13 ft (1,361.886 m) above mean sea level. Prior to Oct. 1, 1915, water-stage recorder or nonrecording gages at several sites about 3.8 mi (6.1 km) downstream at different datums. Oct. 1, 1915 to Sept. 30, 1925, water-stage recorder or nonrecording gages at several sites within 1.5 mi (2.4 km) downstream at different datums.

REMARKS.--Records good. Entire flow of Swiftcurrent Creek below Lake Sherburne is diverted into Lower St. Mary Lake above station. Flow of Swiftcurrent Creek regulated by Lake Sherburne (see p. 29) since 1919. Since October 1950, monthly discharge and runoff figures adjusted for change in contents (adjusted for evaporation since October 1961) in Lake Sherburne.

AVERAGE DISCHARGE.--42 years (1901-2, 1910-25, 1950-76), 800 ft^3/s (22.66 m^3/s), 579,600 acre-ft/yr (715 hm^3/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,500 ft^3/s (467 m^3/s) June 9, 1964, gage height, 12.96 ft (3.950 m), from high-water mark in well, from rating curve extended above 6,100 ft^3/s (173 m^3/s) on basis of slope-area measurement of peak flow; minimum, 26 ft^3/s (0.74 m^3/s) Jan. 5, 1953, Jan. 8, 1958.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,340 ft^3/s (94.6 m^3/s) May 13, gage height, 5.16 ft (1.573 m); minimum daily, 89 ft^3/s (2.52 m^3/s) Mar. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	437	306	223	210	153	94	96	573	2220	1520	1380	1300
2	346	299	237	200	149	90	97	588	2050	1630	1350	1260
3	298	290	278	196	148	90	95	627	1870	1670	1340	1220
4	356	303	364	195	150	94	97	705	1740	1680	1350	1200
5	424	327	473	196	144	103	103	904	1620	1700	1390	1160
6	489	359	537	187	138	114	112	1210	1540	1750	1390	1130
7	598	403	576	181	134	110	125	1440	1540	1830	1400	1110
8	680	434	593	177	128	107	143	1660	1510	1920	1390	1110
9	711	442	610	177	129	105	166	1980	1550	2040	1380	1110
10	718	440	610	170	124	103	193	2390	1680	2090	1390	1120
11	708	444	593	168	122	99	230	2870	1830	2140	1400	1120
12	706	431	564	167	124	101	280	3220	1930	2180	1400	1130
13	689	431	532	161	124	103	345	3310	1960	2210	1380	1100
14	671	414	494	153	122	99	416	3250	1950	2230	1390	1080
15	659	413	468	154	119	99	495	3220	1850	2200	1390	1050
16	625	388	442	154	117	96	559	3070	1730	2110	1410	1030
17	595	366	417	159	117	96	612	2900	1670	2010	1390	1010
18	563	341	397	179	117	99	632	2620	1640	1920	1360	1010
19	559	320	378	181	114	103	636	2330	1640	1860	1330	999
20	559	299	355	178	112	100	624	2180	1700	1770	1360	985
21	551	285	335	178	110	98	618	2080	1830	1660	1400	979
22	553	277	316	170	110	95	592	1990	1940	1600	1470	966
23	549	272	300	167	107	100	574	1920	1960	1560	1510	965
24	501	273	283	164	107	97	552	1960	1950	1510	1540	957
25	452	273	273	162	112	97	530	2190	1910	1470	1530	994
26	410	265	261	155	114	94	547	2320	1800	1440	1550	970
27	377	259	249	163	105	92	588	2330	1660	1420	1530	952
28	354	248	239	161	99	91	581	2330	1520	1430	1490	967
29	347	237	231	163	96	91	569	2370	1420	1430	1450	965
30	328	230	230	160	---	89	565	2350	1400	1450	1400	940
31	314	---	220	158	---	91	---	2290	---	1430	1350	---
TOTAL	16127	10069	12078	5344	3545	3040	11772	65177	52610	54860	43790	31889
MEAN	520	336	390	172	122	98.1	392	2102	1754	1770	1413	1063
MAX	718	444	610	210	153	114	636	3310	2220	2230	1550	1300
MIN	298	230	220	153	96	89	95	573	1400	1420	1330	940
AC-FT	31990	19970	23960	10600	7030	6030	23350	129300	104400	108800	86860	63250
MEAN†	551	495	556	247	168	126	497	2252	1912	1840	1094	473
CFSM†	1.98	1.78	2.00	.89	.60	.45	1.79	8.10	6.88	6.62	3.94	1.70
IN†	2.28	1.99	2.30	1.02	.65	.52	1.99	9.34	7.68	7.63	4.54	1.90
AC-FT†	33871	29481	34176	15162	9642	7720	29556	138461	113798	113151	67274	28130

OBSERVED

CAL YR 1975	TOTAL	377643	MEAN	1035	MAX	12900	MIN	46	AC-FT	749056		
WTR YR 1976	TOTAL	310301	MEAN	848	MAX	3310	MIN	89	AC-FT	615484		

ADJUSTED

CAL YR 1975	TOTAL	384303	MEAN	1053	CFSM	3.79	IN	51.42	AC-FT	762267		
WTR YR 1976	TOTAL	312790	MEAN	855	CFSM	3.08	IN	41.84	AC-FT	620422		

† Adjusted for change in contents and evaporation in Lake Sherburne.

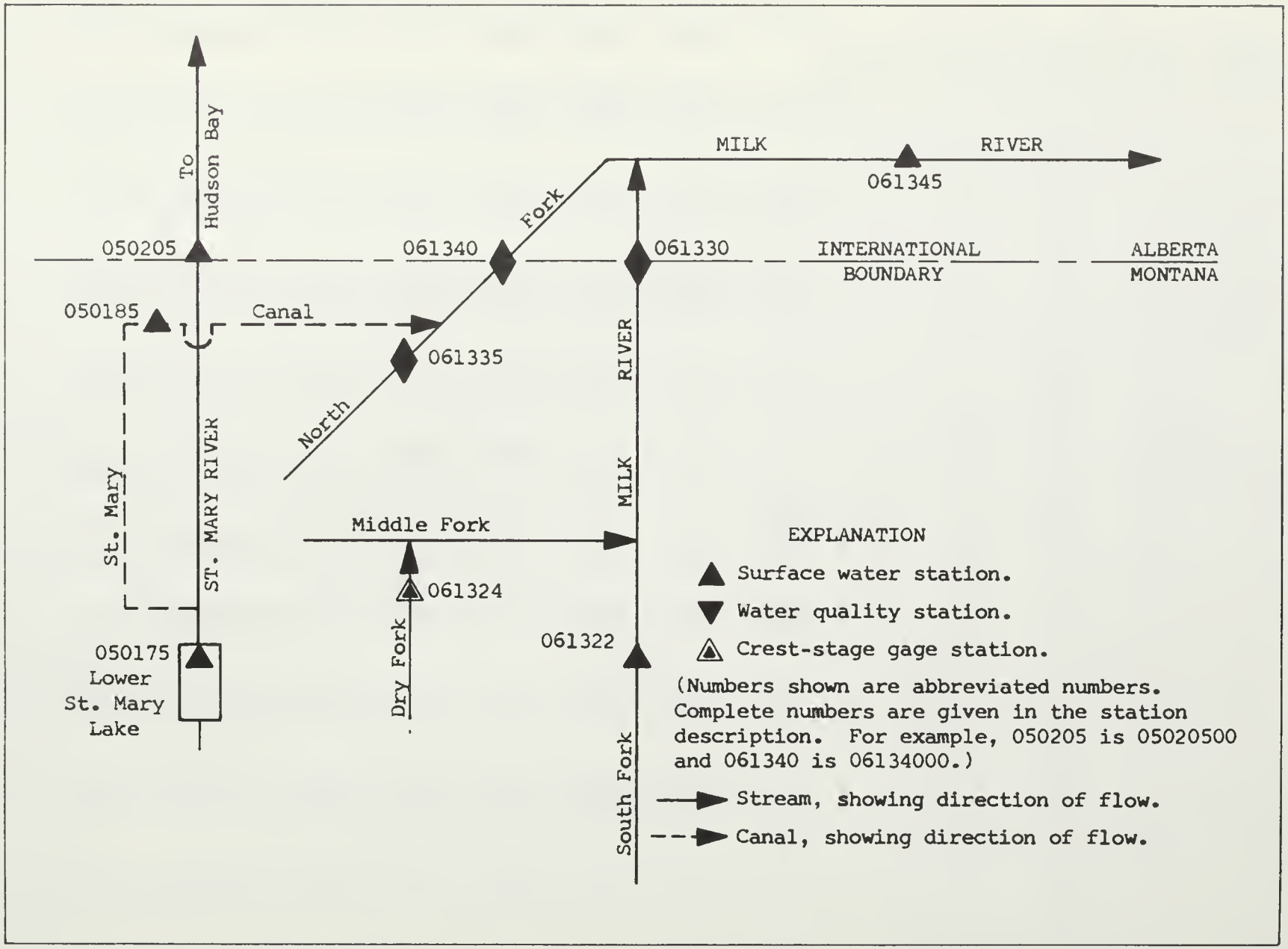


Figure 6 Schematic diagram showing diversion from St. Mary River in Part 5 to Milk River in Part 6.

05018500 ST. MARY CANAL AT ST. MARY CROSSING, NEAR BABB, MT

(International gaging station)

LOCATION.--Lat 48°56'50", long 113°22'28", in NE¼SW¼SW¼ sec.19, T.37 N., R.13 W., Glacier County, Hydrologic Unit 10010002, on left bank 50 ft (15 m) upstream from inlet of St. Mary siphon, 6.6 mi (10.6 km) northeast of Babb, and 9 mi (15 km) downstream from intake.

PERIOD OF RECORD.--July 1918 to current season (seasonal records only). Monthly discharge only for some periods, published in WSP 1308, 1728.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 4,450 ft (1,360 m), from topographic map. Prior to June 14, 1951, water-stage recorder at several sites 0.8 mi (1.3 km) downstream at different datums.

REMARKS.--Records excellent. Canal diverts water from left bank of St. Mary River near Babb and discharges into North Fork Milk River. This water flows in the natural channel of Milk River through Canada and then back into Montana, where it is used for irrigation in Milk River Valley east of Havre. Some water may be returned to St. Mary River at Kennedy Creek and St. Mary crossings.

COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 767 ft^3/s (21.7 m^3/s) June 19, 28, 1936; no flow at times each season.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				0	200	703	713	705	654	595	0	
2				0	197	701	713	705	651	428	---	
3				0	196	705	710	704	649	265	---	
4				0	216	703	712	707	647	208	---	
5				0	354	698	712	708	645	100	---	
6				0	469	698	714	706	644	22	---	
7				0	563	698	718	705	644	.48	---	
8				0	598	696	711	704	645	0	---	
9				0	605	696	709	703	644	0	---	
10				0	607	700	696	703	645	0	---	
11				0	588	704	696	702	643	0	---	
12				0	591	707	699	700	643	0	---	
13				0	566	711	592	696	643	0	---	
14				0	623	710	615	699	637	0	---	
15				0	633	706	615	698	623	0	---	
16				0	628	702	681	700	622	0	---	
17				0	629	699	700	699	620	0	---	
18				0	659	698	696	699	619	0	---	
19				6.5	670	699	695	698	620	0	---	
20				101	688	699	692	698	620	0	---	
21				173	697	702	683	698	619	0	---	
22				191	696	707	694	700	618	0	---	
23				191	695	708	695	694	616	0	---	
24				189	696	708	694	674	616	0	---	
25				187	700	708	693	660	620	0	---	
26				190	701	706	696	661	618	0	---	
27				190	703	701	704	661	618	0	---	
28				189	704	697	706	659	618	0	---	
29				189	705	693	706	658	615	0	---	
30				196	704	695	709	657	612	0	---	
31				---	704	---	707	657	---	0	---	
TOTAL			0	1992.5	17985	21058	21476	21418	18928	1618.48	---	
MEAN			0	66.4	580	702	693	691	631	52.2	---	
MAX			0	196	705	711	718	708	654	595	---	
MIN			0	0	196	693	592	657	612	0	---	
AC-FT			0	3950	35670	41770	42600	42480	37540	3210	---	

THE SEASON APRIL TO OCTOBER AC-FT 207,200

Note.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

05020500 ST. MARY RIVER AT INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 49°00'12", long 113°18'48", in SW¼ sec.5, T.1, R.25 W., fourth meridian, in Alberta, Hydrologic Unit 10010002, on right bank 0.4 mi (0.6 km) north of international boundary, 2.5 mi (4.0 km) downstream from Boundary Creek, 7.5 mi (12.1 km) southwest of Kimball, Alberta, and 11.5 mi (18.5 km) northeast of Babb, Mt.

DRAINAGE AREA.--469 mi^2 (1,215 km^2).

PERIOD OF RECORD.--September 1902 to current year. Monthly discharge only for some periods, published in WSP 1308. Published as "near Cardston, Alberta" and "at Cook's Ranch, Alberta" 1902-12 and as "near Kimball, Alberta" 1913-55.

REVISED RECORDS.--WSP 1308: 1902, 1908-12. WSP 1508: 1902, 1908-9.

GAGE.--Water-stage recorder. Altitude of gage is 4,120 ft (1,260 m), from topographic map. Prior to Jan. 1, 1913, nonrecording gages at two sites within 0.3 mi (0.5 km) of present site at different datums. Jan. 1, 1913, to Oct. 25, 1955, water-stage recorder at several sites about 8 mi (13 km) downstream from present site at various datums. Oct. 26, 1955, to Mar. 23, 1965, water-stage recorder at site 100 ft (30 m) upstream at datum 2 ft (0.6 m) higher.

REMARKS.--Records good except those for winter months, which are poor. Since 1917, St. Mary Canal has diverted water from the river near Babb, Mt. to North Fork Milk River. Some regulation by Lake Sherburne on Swift-current Creek.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

AVERAGE DISCHARGE.--14 years (1902-16), prior to operation of St. Mary Canal, 1,003 ft^3/s (28.40 m^3/s), 726,700 acre-ft/yr (896 hm^3/yr); 60 years (1916-76), 709 ft^3/s (20.08 m^3/s), 513,700 acre-ft/yr (633 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,000 ft^3/s (1,133 m^3/s) June 5, 1908, gage height, 12.75 ft (3.886 m), from floodmarks, site and datum then in use, from rating curve extended above 6,000 ft^3/s (170 m^3/s); minimum daily, 16 ft^3/s (0.45 m^3/s) Nov. 29, 1936.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,210 ft^3/s (90.9 m^3/s) May 13, gage height, 6.78 ft (2.067 m); minimum daily, 122 ft^3/s (3.46 m^3/s) Mar. 11-15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	562	412	304	310	245	136	239	790	1770	1070	799	698
2	469	409	364	293	242	132	230	796	1620	1140	770	665
3	415	400	439	275	230	128	230	826	1420	1170	748	630
4	465	406	562	260	215	126	236	868	1300	1160	775	600
5	517	427	595	251	202	128	260	1050	1180	1180	847	570
6	585	461	647	242	196	132	296	1270	1130	1220	835	547
7	728	508	653	233	191	136	359	1360	1150	1290	835	538
8	826	521	680	224	188	138	388	1550	1120	1380	817	529
9	861	530	747	221	183	134	424	1900	1180	1490	799	516
10	868	530	734	215	176	130	464	2250	1320	1540	805	525
11	854	535	692	210	174	122	505	2820	1420	1560	805	529
12	847	530	664	207	176	122	560	3020	1510	1620	799	529
13	826	521	647	204	178	122	650	3060	1550	1790	781	516
14	799	508	610	202	183	122	712	3080	1530	1720	775	499
15	779	521	605	202	183	122	778	3020	1430	1690	799	481
16	734	490	575	204	178	132	856	2780	1340	1530	811	457
17	692	461	557	230	174	142	892	2600	1330	1420	775	440
18	664	433	548	245	169	164	904	2280	1260	1340	742	436
19	658	403	477	248	164	215	874	1970	1260	1280	709	432
20	664	376	442	245	160	293	760	1820	1340	1230	720	417
21	653	379	427	245	153	328	685	1680	1400	1130	742	409
22	653	385	412	245	160	296	605	1590	1520	1040	805	398
23	653	340	394	239	164	239	580	1540	1530	995	853	398
24	610	346	382	233	164	215	550	1600	1510	954	915	388
25	562	340	376	224	160	204	535	1770	1460	928	928	432
26	521	334	367	215	157	196	525	1890	1340	865	934	417
27	481	322	355	227	153	191	605	1870	1180	829	928	391
28	457	313	343	236	146	181	620	1920	1070	835	877	402
29	439	307	340	245	142	181	610	1950	988	841	841	402
30	457	307	334	245	---	186	718	1890	967	865	787	388
31	430	---	325	245	---	210	---	1830	---	841	742	---
TOTAL	19729	12755	15597	7320	5206	5303	16650	58640	40185	37943	25098	14579
MEAN	636	425	503	236	180	171	555	1892	1340	1224	810	486
MAX	868	535	747	310	245	328	904	3080	1770	1790	934	698
MIN	415	307	304	202	142	122	230	790	967	829	709	388
AC-FT	39130	25300	30940	14520	10330	10520	33030	116300	79710	75260	49780	28920

CAL YR 1975 TOTAL 410740 MEAN 1125 MAX 16600 MIN 59 AC-FT 814700
WTR YR 1976 TOTAL 259005 MEAN 708 MAX 3080 MIN 122 AC-FT 513700

06012500 RED ROCK RIVER BELOW LIMA RESERVOIR, NEAR MONIDA, MT

LOCATION.--Lat 44°39'22", long 112°22'14", in NE¼SE¼SE¼ sec. 31, T.13 S., R.6 W., Beaverhead County, Hydrologic Unit 10020001, on right bank just downstream from Lima Reservoir, 7 mi (11 km) northwest of Monida.

DRAINAGE AREA.--570 mi^2 (1,476 km^2).

PERIOD OF RECORD.--January 1911 to December 1918, April 1919, May 1925 to October 1933, April 1934 to September 1935, May 1936 to October 1938, May 1939 to September 1969, June 1974 to current year (no winter records). Monthly discharge only for some periods, published in WSP 1309. Prior to October 1950, published as "below Red Rock Reservoir."

REVISED RECORDS.--WSP 1309: 1935. WSP 1389: 1912, 1934. WSP 1559: Drainage area.

GAGE.--Water-stage recorder and sharp-crested weir. Altitude of gage is 6,530 ft (1,990 m), estimated from spillway elevation based on Montana Department of Natural Resources and Conservation datum. See WSP 1709 for history of nonrecording gage changes prior to May 8, 1939.

REMARKS.--Records good. Flow regulated by Lima Reservoir (see p.577). No storage during 1934. Diversions for irrigation of about 10,000 acres (40.5 km^2) above reservoir.

AVERAGE DISCHARGE.--48 years (1911-18, 1925-33, 1934-35, 1936-38, 1939-69), 143 ft^3/s (4.050 m^3/s), 103,600 acre-ft/yr (128 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 2,500 ft^3/s (70.8 m^3/s) May 15, 1933, gage height, 5.40 ft (1.646 m), estimated by dam tender, released to prevent failure of dam; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 705 ft^3/s (20.0 m^3/s) June 9, gage height, 2.69 ft (0.820 m); minimum daily, 23 ft^3/s (0.651 m^3/s) Apr. 11, 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	130						25	260	571	553	242	179
2	130						25	263	580	558	240	179
3	114						25	266	635	558	225	179
4	99						25	323	645	540	189	179
5	75						25	375	636	466	189	179
6	61						25	382	622	535	189	179
7	61						25	386	608	535	187	179
8	61						25	390	622	535	187	179
9	61						25	397	701	535	187	177
10	60						25	409	696	530	187	177
11	60						23	421	691	530	184	177
12	60						23	441	696	530	184	177
13	60						25	492	696	526	184	177
14	60						37	526	691	526	184	177
15	60						69	535	691	496	184	177
16	60						69	544	691	409	184	177
17	60						69	562	691	348	184	177
18	60						69	566	691	323	182	177
19	60						69	589	691	323	182	177
20	60						69	603	691	273	182	177
21	60						69	603	691	248	182	177
22	60						107	603	649	248	182	72
23	61						153	603	612	245	182	71
24	61						153	603	617	245	182	112
25	61						175	608	617	245	182	112
26	61						230	612	580	245	182	112
27	61						232	603	558	245	179	112
28	61						250	599	558	245	179	112
29	60						258	599	558	245	179	112
30	60						260	594	553	245	179	112
31	60						---	580	---	245	179	---
TOTAL	2118	---		---			2659	15337	19228	12330	5843	4660
MEAN	68.3	---		---			88.6	495	641	398	188	155
MAX	130	---		---			260	612	701	558	242	179
MIN	60	---		---			23	260	553	245	179	71
AC-FT	4200	---		---			5270	30420	38140	24460	11590	9240

06014500 RED ROCK RIVER AT RED ROCK, MT

LOCATION.--Lat 44°55'02", long 112°49'48", in SW¼SE¼ sec.33, T.10 S., R.10 W., Beaverhead County, Hydrologic Unit 10020001, on right bank 0.6 mi (1.0 km) downstream from bridge on county road, 1.8 mi (2.9 km) upstream from Clark Canyon Reservoir flow line, and 1.3 mi (2.1 km) northwest of Red Rock.

DRAINAGE AREA.--1,548 mi^2 (4,010 km^2).

PERIOD OF RECORD.--January to October 1890 (monthly discharge only), October 1950 to September 1952, May 1974 to September 1975 (no winter records), October 1975 to current year.

GAGE.--Water-stage recorder. Datum of gage is 5,582.45 ft (1,701.531 m) above mean sea level. Prior to May 1974, records collected at site 0.6 mi (1.0 km) upstream at different datum.

REMARKS.--Records good. Flow partly regulated by Lima Reservoir (see p.577). Diversions for irrigation of about 39,000 acres (158 km^2) above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,130 ft^3/s (32.0 m^3/s) May 16, 1975, gage height, 4.23 ft (1.289 m); maximum gage height, 4.26 ft (1.298 m) May 25, 1975 (backwater from tree below gage); minimum daily discharge, 4.0 ft^3/s (0.113 m^3/s) May 24, 1951, site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 826 ft^3/s (23.4 m^3/s) May 16, gage height, 3.87 ft (1.180 m); minimum daily, 145 ft^3/s (4.11 m^3/s) Feb. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	350	350	270	210	193	181	190	486	302	280	260	217
2	342	346	290	220	190	170	199	516	270	253	260	217
3	334	342	290	226	190	160	196	528	256	249	267	214
4	326	334	286	242	169	170	193	546	246	246	278	214
5	322	318	294	223	160	175	199	606	232	242	286	217
6	314	302	290	220	150	180	214	837	211	232	274	223
7	322	298	266	223	145	181	263	618	202	226	267	226
8	338	294	290	220	160	184	326	594	184	235	263	229
9	338	306	294	217	170	181	410	637	187	235	260	232
10	334	310	294	214	181	175	350	644	187	226	270	235
11	342	306	290	214	184	170	350	679	187	223	282	253
12	346	302	290	211	178	165	430	742	199	226	278	270
13	360	296	278	217	181	165	405	693	211	226	267	267
14	365	302	267	235	181	169	370	714	226	232	270	286
15	360	310	260	211	181	169	346	778	229	232	267	294
16	360	310	270	211	181	172	318	810	235	235	260	294
17	350	310	270	214	181	175	298	770	280	235	267	302
18	350	302	263	211	181	181	298	742	263	249	267	314
19	346	290	260	208	181	187	302	721	287	253	249	326
20	346	286	256	211	181	172	302	679	274	263	235	330
21	342	278	249	208	178	175	302	644	302	283	226	334
22	350	278	249	205	184	175	314	637	346	253	229	342
23	350	274	249	202	178	181	334	651	385	253	256	322
24	342	290	256	202	181	178	346	612	375	253	263	320
25	334	290	256	202	184	181	380	570	348	260	242	315
26	338	286	256	199	184	178	410	564	342	253	229	310
27	342	286	260	193	187	184	405	498	326	239	223	305
28	346	282	253	193	187	181	405	440	310	235	223	305
29	350	274	253	193	187	184	430	420	298	232	220	300
30	355	263	249	193	---	181	456	385	287	235	217	300
31	355	---	220	193	---	184	---	338	---	249	217	---
TOTAL	10649	9017	8338	6541	5188	5464	9741	18899	7925	7503	7872	8313
MEAN	344	301	269	211	178	176	325	610	264	242	254	277
MAX	365	350	294	242	193	187	456	810	385	263	286	342
MIN	314	263	220	193	145	160	190	338	184	223	217	214
AC-FT	21120	17890	16540	12970	10250	10840	19320	37490	15720	14880	15610	16490

WTR YR 1976 TOTAL 105430 MEAN 288 MAX 810 MIN 145 AC-FT 209100

06015300 CLARK CANYON RESERVOIR NEAR GRANT, MT

LOCATION.--Lat 45°00'06", long 112°51'27", in SE¼SW¼ sec. 32, T.9 S., R.10 W., Beaverhead County, Hydrologic Unit 10020001, in shaft house near left end of dam on Beaverhead River, 1.5 mi (2.4 km) upstream from Clark Canyon Creek, and 10 mi (16 km) east of Grant.

DRAINAGE AREA.--2,321 mi^2 (6,011 km^2).

PERIOD OF RECORD.--May 1964 to current year (monthend contents only). Records of daily elevations are in files of Helena district office.

GAGE.--Water-stage recorder in shaft house. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

REMARKS.--Reservoir is formed by zoned earthfill dam with concrete control works and spillway completed in October 1964. Storage began Aug. 28, 1964 (uncontrolled storage began June 10, 1964). Usable capacity, 257,200 acre-ft (317 hm^3) between elevation 5,455.00 ft (1,662.684 m), invert of outlet works, and 5,560.40 ft (1,694.810 m), top of flood control. Dead storage, 61 acre-ft (75,200 m^3) below elevation 5,455.00 ft (1,662.684 m). Normal operating level, 177,500 acre-ft (219 hm^3) at elevation 5,546.00 ft (1,690.421 m). Minimum operating level, 1,450 acre-ft (1.79 hm^3) at elevation 5,470.60 ft (1,667.439 m). Figures given herein represent usable contents; total contents published in previous water-supply papers and annual reports for May 1964 to September 1975. Water is used for irrigation, flood control, and recreation.

COOPERATION.--Elevations and capacity table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 236,600 acre-ft (292 hm^3) July 22, 1975 (elevation, 5,556.88 ft or 1,693.737 m); minimum since normal operating level was reached, 58,960 acre-ft (72.7 hm^3) Oct. 11, 1974 (elevation, 5,516.80 ft or 1,681.521 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents at 2400, 223,400 acre-ft (275 hm^3) June 25 (elevation 5,554.54 ft or 1,693.024 m); minimum, 149,900 acre-ft (185 hm^3) Mar. 8, 9 (elevation, 5,540.49 ft or 1,688.741 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Elevation (feet)	Contents (acre-feet)	Change in Contents (acre-feet)
Sept. 30	5,544.67	170,700	-
Oct. 31	5,543.55	165,000	-5,700
Nov. 30	5,542.71	160,800	-4,200
Dec. 31	5,542.16	158,100	-2,700
CAL YR 1975			+60,530
Jan. 31	5,541.11	152,900	-5,200
Feb. 29	5,540.57	150,300	-2,600
Mar. 31	5,541.44	154,600	+4,300
Apr. 30	5,545.87	176,800	+22,200
May 31	5,553.91	219,900	+43,100
June 30	5,554.32	222,200	+2,300
July 31	5,548.36	189,800	-32,400
Aug. 31	5,542.82	161,400	-28,400
Sept. 30	5,542.12	157,900	-3,500
WTR YR 1976			-12,800

06015400 BEAVERHEAD RIVER NEAR GRANT, MT

LOCATION.--Lat 45°00'12", long 112°51'10", in NW¼SW¼SE¼ sec.32, T.9 S., R.10 W., Beaverhead County, Hydrologic Unit 10020002, on right bank 0.4 mi (0.6 km) downstream from Clark Canyon Dam, 1.3 mi (2.1 km) upstream from Clark Canyon Creek, and 10.3 mi (16.6 km) east of Grant.

DRAINAGE AREA.--2,322 mi^2 (6,014 km^2).

PERIOD OF RECORD.--September 1962 to current year. Prior to October 1968, published as "near Armstead."

GAGE.--Water-stage recorder. Datum of gage is 5,442.78 ft (1,658.959 m) above mean sea level.

REMARKS.--Records good. Diversions for irrigation of about 76,500 acres (310 km^2) above station. Flow completely regulated by Clark Canyon Reservoir (see preceding page).

AVERAGE DISCHARGE.--14 years, 401 ft^3/s (11.36 m^3/s), 290,500 acre-ft/yr (358 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,110 ft^3/s (59.8 m^3/s) Feb. 7, 1963, gage height, 7.19 ft (2.192 m); no flow part of Oct. 1, 1968, when gates in dam were closed; minimum daily, 22 ft^3/s (0.623 m^3/s) Oct. 16, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1.050 ft^3/s (29.7 m^3/s) July 18, gage height, 5.76 ft (1.756 m); minimum daily, 171 ft^3/s (4.84 m^3/s) Mar. 20, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	750	501	519	477	376	331	306	256	915	721	895	833
2	810	501	569	482	376	331	306	256	790	718	899	833
3	810	505	505	482	376	336	306	260	770	718	885	814
4	810	501	515	486	376	336	306	260	699	716	885	756
5	805	501	519	482	372	336	306	260	679	739	874	661
6	805	524	515	477	376	336	311	260	800	823	875	569
7	800	537	515	477	376	336	311	264	840	868	873	487
8	800	533	515	477	376	340	311	264	925	859	877	445
9	800	533	519	477	376	319	311	264	951	868	855	449
10	780	528	524	472	356	302	311	267	977	886	820	449
11	765	533	524	468	348	306	311	267	978	884	821	453
12	760	528	528	468	348	302	311	372	930	917	828	451
13	715	524	528	468	348	302	311	551	885	965	829	454
14	660	524	533	468	348	302	311	622	838	967	835	453
15	551	528	528	468	356	298	315	665	815	1000	839	455
16	472	528	524	463	352	298	315	670	797	1030	841	454
17	468	528	496	463	348	260	315	675	787	1030	845	456
18	472	519	463	463	331	235	315	750	788	978	844	454
19	472	524	458	458	327	311	298	840	713	945	855	454
20	472	524	458	458	327	171	256	900	712	938	854	452
21	472	533	463	454	323	171	256	925	713	916	854	453
22	472	546	463	454	323	225	256	930	710	913	853	451
23	440	551	468	440	323	283	256	935	710	887	857	453
24	436	546	472	384	327	302	256	940	716	877	857	454
25	472	546	468	384	327	302	260	940	716	873	856	453
26	468	546	468	384	327	302	260	940	721	879	857	453
27	463	546	468	380	327	302	260	945	718	879	850	449
28	486	510	472	380	331	302	256	940	722	875	834	449
29	501	482	472	380	331	306	256	940	719	880	831	445
30	501	482	472	376	---	306	256	945	722	886	832	446
31	501	---	477	376	---	306	---	955	---	890	828	---
TOTAL	18989	15712	15418	13826	10108	9195	8715	19258	23756	27315	26438	15338
MEAN	613	524	497	446	349	297	291	621	792	881	853	511
MAX	810	551	569	486	376	340	315	955	978	1030	899	833
MIN	436	482	458	376	323	171	256	256	679	716	820	445
AC-FT	37660	31160	30580	27420	20050	18240	17290	38200	47120	54180	52440	30420

CAL YR 1975 TOTAL 183433 MEAN 503 MAX 1320 MIN 48 AC-FT 363800
WTR YR 1976 TOTAL 204068 MEAN 558 MAX 1030 MIN 171 AC-FT 404800

06016000 BEAVERHEAD RIVER AT BARRETTS, MT

LOCATION.--Lat 45°06'59", long 112°44'59", in SW¼SE¼ sec.19, T.8 S., R.9 W., Beaverhead County, Hydrologic Unit 10020002, on left bank 1 mi (2 km) upstream from Barretts, 2 mi (3 km) downstream from Grasshopper Creek, and 8.9 mi (14.3 km) southwest of Dillon.

DRAINAGE AREA.--2,737 mi² (7,089 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1907 to current year. Monthly discharge only for some periods, published in WSP 1309. Prior to October 1963, published as "at Barratts".

REVISED RECORDS.--WSP 1279: 1908(M), 1910-12(M), 1929(M), 1935-36. WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,268.17 ft (1,605.738 m) above mean sea level. Prior to Oct. 19, 1934, nonrecording gages at same site and datum.

REMARKS.--Water-discharge records good. Some regulation by Lima Reservoir (see p.577) and nearly complete regulation by Clark Canyon Reservoir (see p. 37) since August 1964. Diversions for irrigation of about 90,000 acres (364 km²) above station.

AVERAGE DISCHARGE.--69 years, 424 ft³/s (12.01 m³/s), 307,200 acre-ft/yr (379 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,720 ft³/s (105 m³/s) June 20, 1908, gage height, 6.1 ft (1.859 m); minimum recorded, 69 ft³/s (1.95 m³/s) Jan. 30, 1938, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,410 ft³/s (39.9 m³/s) May 24, gage height, 3.14 ft (0.957 m); minimum daily, 337 ft³/s (9.54 m³/s) Mar. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	770	626	584	535	460	420	582	429	1310	798	1100	870
2	866	628	734	525	458	415	498	442	1170	798	1110	870
3	872	628	639	530	480	413	474	463	1080	799	1080	857
4	872	628	662	530	450	416	497	533	1000	790	1060	817
5	872	622	644	530	449	417	554	570	922	796	1050	725
6	866	633	628	530	444	418	638	558	1060	869	1020	653
7	884	850	628	533	444	421	706	570	1100	916	1010	579
8	890	650	633	536	444	422	696	533	1200	917	1010	536
9	884	628	656	536	445	415	697	542	1220	914	1000	534
10	872	628	662	540	434	394	571	559	1240	949	929	545
11	872	622	639	536	423	395	534	648	1300	949	921	566
12	878	617	617	535	431	396	583	680	1300	972	915	592
13	878	626	595	536	431	398	564	868	1280	1080	911	581
14	800	633	595	531	435	397	529	978	1210	1080	905	570
15	698	844	595	528	435	401	513	1080	1100	1100	901	561
16	578	658	611	531	438	407	476	1110	1040	1170	902	557
17	578	639	573	535	438	416	456	1090	1070	1190	908	558
18	573	639	530	535	426	456	447	1110	1120	1200	906	580
19	567	811	535	536	410	693	440	1250	1010	1130	910	649
20	578	600	530	537	408	396	402	1290	917	1120	906	621
21	578	611	525	526	411	337	404	1320	950	1100	896	589
22	600	633	525	525	409	355	402	1320	1090	1120	891	573
23	569	644	525	508	408	447	407	1360	1180	1100	935	571
24	545	662	530	462	409	443	399	1390	1070	1070	972	577
25	576	656	535	465	413	447	421	1390	920	1070	971	565
26	584	650	540	461	414	421	424	1390	868	1080	928	563
27	584	656	540	480	419	425	408	1360	885	1090	900	563
28	589	628	535	457	419	415	410	1330	845	1070	869	556
29	611	560	535	460	420	412	417	1350	826	1070	863	551
30	622	540	540	460	---	416	421	1370	814	1090	866	551
31	628	---	535	460	---	497	---	1330	---	1090	866	---
TOTAL	22156	18852	18155	15909	12485	13123	14970	30211	32097	31469	29411	18480
MEAN	715	628	586	513	431	423	499	975	1070	1016	949	616
MAX	890	662	734	540	460	693	706	1390	1310	1200	1110	870
MIN	545	540	525	457	408	337	399	429	814	790	863	534
AC-FT	43950	37390	36010	31560	24780	26030	29690	59920	63660	62460	58340	36660

CAL YR 1975 TOTAL 236273 MEAN 647 MAX 1480 MIN 110 AC-FT 468600
WTR YR 1976 TOTAL 257338 MEAN 703 MAX 1390 MIN 337 AC-FT 510400

06016000 BEAVERHEAD RIVER AT BARRETTS, MT--Continued

WATER-QUALITY RECORDS

LOCATION.--Samples collected at private road bridge 800 ft (244 m) upstream from Barretts, 1.0 mi (1.6 km) downstream from gaging station, 2.5 mi (4.0 km) downstream from Grasshopper Creek, and 8.0 mi (12.9 km) southwest of Dillon.
PERIOD OF RECORD.--Water years 1949-51, 1965 to current year.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1965 to current year.
WATER TEMPERATURES: July 1965 to current year.
INSTRUMENTATION.--Temperature recorder October 1966, May-October 1967, May-September 1968, June-September 1970, May-July 1971, September 1971-September 1972.
REMARKS.--The computations of tons per day of dissolved solids refer to flow past the gaging station. Some regulation by Lima Reservoir and nearly complete regulation by Clark Canyon Reservoir. Many diversions for irrigation upstream from station.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 733 micromhos Jan. 24, 1967; minimum daily, 353 micromhos June 8, 1967.
WATER TEMPERATURES: Maximum daily, 21.0°C on several days during 1970 and 1974; minimum daily, 0.0°C on several days during winter periods most years.
EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 637 micromhos Feb. 2; minimum daily, 363 micromhos Nov. 13.
WATER TEMPERATURES: Maximum daily, 18.5°C on several days during July to September; minimum daily, 1.0°C Nov. 28.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE (DEG C)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
OCT												
01...	1645	860	501	14.5	240	35	60	21	22	.6	4.1	245
NOV												
04...	1145	628	527	6.5	220	28	58	19	22	.6	3.9	238
DEC												
03...	1555	710	524	5.0	240	41	63	19	17	.5	4.0	237
JAN												
06...	1530	530	566	3.0	250	43	64	22	21	.6	4.2	253
FEB												
03...	1150	460	575	3.0	250	47	65	22	22	.6	4.2	251
MAR												
10...	1445	392	574	5.5	260	54	67	22	22	.6	4.5	248
APR												
01...	1525	539	490	6.5	220	43	55	19	21	.6	5.1	211
30...	1055	426	513	6.5	220	38	56	19	22	.6	4.5	220
JUN												
10...	1435	1250	444	15.0	200	34	50	18	18	.6	3.8	201
23...	0850	1180	420	12.5	170	22	45	15	20	.7	3.9	185
AUG												
05...	1540	1050	464	18.5	210	32	56	18	19	.6	4.0	222
SEP												
02...	1750	886	495	18.5	230	40	61	20	20	.6	4.1	237

DATE	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT												
01...	66	10	.4	19	324	.44	752	.06	.03	.00	40	10
NOV												
04...	68	11	.4	17	317	.43	538	.13	.02	.02	30	10
DEC												
03...	71	10	.5	19	321	.44	615	.17	.02	.02	30	10
JAN												
06...	88	9.1	.4	18	353	.48	505	.22	.04	.04	10	20
FEB												
03...	89	11	.5	18	357	.49	443	.21	.06	.05	20	20
MAR												
10...	86	11	.4	19	356	.48	377	.27	.10	.07	0	20
APR												
01...	69	10	.4	16	300	.41	437	.13	.12	.08	60	20
30...	82	11	.4	17	321	.44	369	.14	.02	.03	40	20
JUN												
10...	63	9.2	.5	17	279	.38	942	.00	.01	.03	60	10
23...	55	8.6	.3	18	257	.35	819	.00	.05	.06	110	30
AUG												
05...	62	9.3	.4	18	296	.40	839	.01	.04	.05	20	20
SEP												
02...	66	10	.4	17	316	.43	756	.03	.06	.03	30	20

06016000 BEAVERHEAD RIVER AT BARRETTS, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	515	423	543	550	553	562	481	453	419	448	---	512
2	517	478	517	550	637	566	530	457	420	447	460	497
3	519	419	518	548	630	560	531	451	430	448	461	509
4	512	451	527	550	632	557	494	441	421	449	493	509
5	521	459	528	550	561	561	492	433	428	442	487	500
6	521	452	512	548	563	566	449	440	440	440	490	500
7	522	379	508	546	560	554	396	439	440	460	493	501
8	528	448	502	549	557	549	385	420	443	460	492	500
9	523	475	506	544	556	550	446	400	440	454	493	478
10	519	426	541	544	552	550	446	398	441	455	491	495
11	523	442	549	550	554	552	448	399	438	457	482	494
12	519	438	547	550	559	552	404	400	430	460	489	491
13	523	363	550	550	557	554	463	415	436	454	483	508
14	531	420	541	551	556	632	463	416	428	457	483	508
15	518	420	538	560	547	635	454	398	433	456	481	509
16	502	462	543	567	549	519	453	396	423	456	481	508
17	508	447	542	560	550	515	461	402	410	458	482	508
18	506	435	555	558	558	459	468	421	408	458	480	500
19	495	526	552	561	550	472	468	422	422	449	483	505
20	498	511	550	556	553	472	462	423	423	451	482	474
21	497	525	539	563	556	491	462	423	441	451	487	497
22	503	535	541	539	550	517	469	420	445	463	486	497
23	502	533	546	549	554	478	469	420	389	461	487	476
24	506	525	557	548	551	562	456	424	---	463	485	---
25	508	516	552	541	550	562	456	419	426	465	487	---
26	509	519	553	557	559	521	453	425	423	461	487	---
27	506	521	552	554	560	521	466	421	429	466	500	---
28	491	521	550	544	551	525	474	423	428	465	502	---
29	491	539	551	556	560	540	474	423	428	467	505	---
30	489	521	549	540	---	504	483	414	430	---	504	---
31	489	---	551	558	---	506	---	419	---	---	501	---
MONTH	510	471	539	551	563	538	462	421	428	456	487	---

YEAR MAX 637 MIN 363 MEAN 494

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.0	9.0	4.0	3.0	5.5	4.0	6.5	7.0	14.5	18.0	---	18.5
2	12.0	6.0	5.0	3.0	4.0	4.0	7.5	9.0	14.5	18.0	17.5	18.5
3	12.0	6.0	5.5	3.0	3.0	4.5	9.0	12.5	16.0	12.0	17.0	18.5
4	13.0	6.0	4.0	3.0	3.0	4.5	9.5	9.0	15.5	17.5	17.5	15.0
5	13.0	6.0	4.0	3.0	3.0	4.5	10.5	10.5	15.5	17.5	17.5	15.0
6	13.0	6.0	5.0	3.0	3.0	5.5	10.5	11.0	11.0	18.0	18.0	15.0
7	11.5	6.0	4.0	2.0	4.0	5.5	10.0	12.0	11.0	18.0	17.0	14.5
8	12.5	5.0	6.0	2.0	4.5	5.5	10.0	15.0	15.5	18.0	17.5	17.0
9	12.0	5.0	6.0	4.0	5.0	6.0	10.0	9.5	16.0	17.5	17.0	18.0
10	12.0	5.5	5.0	2.5	5.0	5.5	10.5	14.0	16.0	18.5	17.0	17.0
11	10.5	5.0	5.0	2.0	5.5	5.0	11.0	14.0	15.0	11.0	18.0	15.0
12	10.0	5.0	4.0	4.0	5.0	5.5	8.5	12.5	15.0	17.0	17.5	17.0
13	10.0	5.0	4.0	5.0	6.0	6.0	8.5	11.5	12.0	18.0	17.5	17.0
14	11.0	5.0	4.0	5.0	5.0	6.0	7.5	11.0	13.0	18.0	17.0	17.0
15	11.0	5.0	4.0	5.5	5.0	6.5	8.5	13.5	13.5	18.0	17.0	17.0
16	11.0	4.5	4.0	5.5	5.5	7.5	8.0	13.0	14.0	17.5	17.0	16.0
17	11.0	4.5	4.0	5.5	5.5	8.0	9.5	13.5	14.5	17.5	17.0	16.5
18	8.5	4.0	5.0	5.5	5.5	5.5	10.0	13.0	15.5	17.5	17.0	14.0
19	8.5	4.0	5.5	5.0	5.0	5.5	10.0	13.0	15.5	18.0	17.0	12.0
20	11.0	4.0	6.0	5.0	5.0	5.5	10.5	13.0	14.0	18.0	17.0	16.0
21	11.5	4.0	6.0	5.0	5.0	6.0	10.5	13.0	15.5	18.0	16.5	16.0
22	8.0	3.0	6.5	6.0	4.5	7.0	10.5	13.0	15.0	18.0	17.0	14.0
23	7.5	3.0	7.0	6.0	5.0	6.0	11.0	13.0	14.0	18.0	16.0	13.5
24	7.5	3.0	6.0	6.0	5.0	5.5	10.0	13.0	---	17.5	16.0	---
25	6.5	2.0	5.0	5.5	5.0	5.5	9.0	13.0	14.5	17.5	16.0	---
26	7.0	2.0	5.0	5.5	5.5	5.5	6.0	14.0	15.5	18.0	16.5	---
27	9.0	1.5	4.0	7.0	5.5	5.5	8.0	16.0	13.0	18.0	18.0	---
28	9.0	1.0	4.0	7.0	4.5	7.0	10.5	14.0	16.0	18.0	18.0	---
29	8.5	3.0	4.0	8.0	4.5	7.0	12.0	11.0	17.5	15.5	18.0	---
30	8.0	3.0	6.0	8.0	---	7.5	7.0	11.0	18.0	---	18.5	---
31	8.0	---	2.0	8.0	---	8.5	---	12.0	---	---	18.0	---
MONTH	10.0	4.5	5.0	5.0	4.5	6.0	9.5	12.5	14.5	17.5	17.0	---

YEAR MAX 18.5 MIN 1.0 MEAN 10.0

06018000 BEAVERHEAD RIVER NEAR DILLON, MT

LOCATION.--Lat 45°18'18", long 112°33'45", in NW¼NE¼NE¼ sec.22, T.6 S., R.8 W., Beaverhead County, Hydrologic Unit 10020002, on right bank just upstream from county road bridge on Anderson Lane, 7.0 mi (11.3 km) northeast of Dillon.

DRAINAGE AREA.--3,484 mi^2 (9,024 km^2).

PERIOD OF RECORD.--October 1950 to September 1952, August 1963 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,960 ft (1,512 m), by barometer. Prior to August 1963, nonrecording gage on upstream side of bridge at same datum.

REMARKS.--Records good. Flow partly regulated by Lima Reservoir (see p.577) and Clark Canyon Reservoir (see p.37) since August 1964. Diversions above station for irrigation of about 133,400 acres (540 km^2) of which about 5,000 acres (20.2 km^2) are irrigated by imported water from Birch and Willow Creeks and of which about 17,100 acres (69.2 km^2) lies below station including 600 acres (2.43 km^2) in Ruby River drainage.

AVERAGE DISCHARGE.--15 years, 395 ft^3/s (11.19 m^3/s), 286,200 acre-ft/yr (353 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,570 ft^3/s (44.5 m^3/s) June 22, 1964, gage height, 5.52 ft (1.682 m); maximum gage height, 6.35 ft (1.935 m) Dec. 19, 1964 (backwater from ice); minimum discharge observed, 8.5 ft^3/s (0.24 m^3/s) June 21, 1952.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,050 ft^3/s (29.7 m^3/s) May 20, gage height, 4.70 ft (1.433 m); maximum gage height, 4.82 ft (1.469 m) Oct. 15 (backwater from aquatic growth); minimum daily discharge, 142 ft^3/s (4.02 m^3/s) June 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	597	787	760	670	577	510	719	615	564	352	292	833
2	661	785	870	647	574	480	674	610	478	284	305	814
3	688	796	886	642	574	440	616	604	338	266	356	806
4	712	780	895	640	560	450	625	645	259	263	366	766
5	724	767	889	646	500	460	682	738	151	258	398	666
6	742	764	866	644	510	470	763	675	142	253	399	573
7	756	791	865	640	520	509	853	700	173	276	402	496
8	798	802	875	649	535	514	907	664	166	251	433	439
9	782	792	895	652	539	517	911	665	182	253	454	420
10	775	780	897	649	534	502	868	671	176	271	402	432
11	775	782	877	647	517	514	739	713	194	263	389	469
12	801	788	844	649	522	499	754	729	268	270	369	609
13	849	799	801	646	527	497	795	841	298	299	371	553
14	871	823	776	644	533	505	740	925	301	313	374	522
15	922	843	771	643	533	507	709	955	325	306	359	524
16	795	865	750	654	533	511	895	986	324	294	352	518
17	740	889	730	665	540	552	644	999	331	298	343	518
18	714	869	705	663	537	568	627	987	427	410	376	620
19	692	835	698	655	505	844	624	1010	505	463	413	691
20	708	795	689	655	501	729	573	1040	425	439	427	707
21	738	774	683	646	498	492	542	1010	439	482	435	653
22	767	802	680	645	497	475	536	988	723	458	464	655
23	787	817	678	642	501	558	555	998	840	443	571	682
24	720	844	680	581	504	594	535	1020	788	386	687	676
25	725	863	687	566	506	597	562	969	628	410	754	673
26	744	856	702	564	513	562	607	828	539	403	826	649
27	748	857	716	565	522	554	571	773	501	371	801	653
28	727	810	688	566	529	540	564	636	476	325	795	646
29	766	750	676	570	535	537	587	653	420	336	831	678
30	778	750	680	571	---	531	615	659	389	308	819	686
31	784	---	675	578	---	602	---	613	---	279	817	---
TOTAL	23386	24233	23864	19494	15276	16620	20192	24919	11827	10283	15380	18827
MEAN	754	808	770	629	527	536	673	804	394	332	496	621
MAX	922	869	897	670	577	844	911	1040	840	482	831	833
MIN	597	750	675	564	497	440	535	604	142	251	292	420
AC-FT	46390	48070	47330	38670	30300	32970	40050	49430	23460	20400	30510	36950

CAL YR 1975 TOTAL 198970 MEAN 545 MAX 997 MIN 163 AC-FT 394700
WTR YR 1976 TOTAL 224101 MEAN 612 MAX 1040 MIN 142 AC-FT 444500

06018500 BEAVERHEAD RIVER NEAR TWIN BRIDGES, MT

LOCATION.--Lat 45°23'01", long 112°27'07", in SW¼NW¼SE¼ sec.22, T.5 S., R.7 W., Madison County, Hydrologic Unit 10020002, on left bank at downstream side of bridge on State Highway 41, 11.5 mi (18.5 km) upstream from Ruby River, 12.7 mi (20.4 km) southwest of Twin Bridges, and 14.5 mi (23.3 km) northeast of Dillon.

DRAINAGE AREA.--3,619 mi^2 (9,373 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1935 to current year. Prior to October 1968, published as "at Blaine."

REVISED RECORDS.--WSP 1309: 1938(M), 1945(M). WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,809.15 ft (1,465.829 m) above mean sea level. Prior to Feb. 17, 1949, nonrecording gage at bridge 0.5 mi (0.8 km) upstream at different datum. Feb. 17, 1949, to June 28, 1951, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records good. Flow partly regulated by Lima Reservoir (see p.577) and Clark Canyon Reservoir (see p.37) since August 1964. Diversions above station for irrigation of about 135,400 acres (548 km^2) of which about 5,000 acres (20.2 km^2) are irrigated by imported water from Birch and Willow Creeks and of which about 9,200 acres (37.2 km^2) lies below station including 600 acres (2.43 km^2) in Ruby River drainage.

AVERAGE DISCHARGE.--41 years, 415 ft^3/s (11.75 m^3/s), 300,700 acre-ft/yr (371 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 3,130 ft^3/s (88.6 m^3/s) June 12, 1944, gage height, 6.76 ft (2.060 m), site and datum then in use; minimum observed, 7.0 ft^3/s (0.20 m^3/s) May 25, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,200 ft^3/s (34.0 m^3/s) May 24, gage height, 6.25 ft (1.905 m); maximum gage height, 6.57 ft (2.003 m) Oct. 15, 16; minimum daily discharge, 157 ft^3/s (4.45 m^3/s) June 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	776	898	850	780	681	580	787	721	557	451	360	938
2	705	898	898	750	677	540	816	711	497	379	362	912
3	738	889	976	754	854	550	731	719	370	300	433	883
4	783	882	912	738	600	580	729	748	310	370	441	863
5	796	878	925	725	580	570	776	844	212	375	463	794
6	824	872	897	723	580	579	847	847	157	336	444	666
7	820	872	889	714	590	585	953	830	193	329	431	596
8	878	885	903	726	619	591	1030	828	188	315	454	521
9	876	880	921	731	629	598	1050	803	188	285	497	484
10	889	867	939	726	622	586	1050	828	186	305	467	503
11	876	854	925	723	603	592	910	856	207	258	428	538
12	903	841	889	731	616	566	875	888	280	264	416	788
13	944	833	859	716	615	583	927	954	355	279	428	702
14	1030	846	833	725	625	589	884	1030	425	303	451	844
15	1050	863	820	742	623	591	837	1050	458	312	424	635
16	1050	880	820	754	622	598	831	1080	484	319	444	624
17	948	894	800	776	627	640	780	1100	524	329	418	614
18	907	885	790	780	628	687	765	1110	627	420	452	781
19	872	867	784	763	595	875	752	1070	760	535	484	980
20	854	820	780	759	586	927	708	1090	701	521	493	923
21	872	816	776	759	580	804	657	1080	681	562	504	839
22	894	818	771	746	582	561	648	1080	894	538	529	798
23	912	820	776	746	586	615	686	1090	1130	554	619	828
24	903	824	776	697	588	693	647	1180	1100	522	813	807
25	848	846	771	662	591	682	665	1160	958	521	886	802
26	872	841	776	650	599	664	735	1040	812	518	961	777
27	876	833	780	669	611	647	705	856	705	474	950	785
28	867	840	771	669	620	630	694	751	635	419	903	758
29	859	830	754	673	618	629	699	893	538	401	947	761
30	889	820	763	677	---	621	722	690	498	411	917	781
31	898	---	780	677	---	700	---	665	---	392	926	---
TOTAL	27185	25690	25904	22461	17727	19413	23876	28392	15628	12357	17743	22305
MEAN	877	856	836	725	611	626	796	916	521	399	572	744
MAX	1050	898	976	780	681	927	1050	1180	1130	562	961	980
MIN	705	816	754	650	580	540	847	665	157	258	360	484
AC-FT	53920	50960	51380	44550	35180	38510	47360	56320	31000	24510	35190	44240

CAL YR 1975 TOTAL 227742 MEAN 824 MAX 1220 MIN 153 AC-FT 451700
WTR YR 1976 TOTAL 258881 MEAN 707 MAX 1180 MIN 157 AC-FT 513100

06018500 BEAVERHEAD RIVER NEAR TWIN BRIDGES, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-51, 1962 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1962 to current year.
WATER TEMPERATURES: July 1962 to current year.

INSTRUMENTATION.--Temperature recorder October 1966, May-October 1967, May-September 1968, June-September 1970, July 1971-September 1972.

REMARKS.--Prior to October 1968, published as "at Blaine." Flow partly regulated by Lima and Clark Canyon Reservoirs. Many diversions for irrigation upstream from station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 896 micromhos June 23, 1963; minimum daily, 433 micromhos May 23, 1969.
WATER TEMPERATURES: Maximum daily, 25.5°C July 27, 1973; minimum daily, 0.0°C on many days during winter periods most years.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 709 micromhos June 6; minimum daily, 488 micromhos April 8.
WATER TEMPERATURES: Maximum daily, 22.0°C July 11; minimum daily, 0.0°C on several days during November to February.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE (DEG C)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
OCT												
02...	1345	721	617	12.0	280	46	70	25	27	.7	5.2	283
NOV												
03...	1600	893	--	8.5	270	50	70	23	26	.7	5.2	268
DEC												
04...	1535	910	--	3.5	260	46	69	22	24	.6	4.8	265
JAN												
05...	1500	722	620	1.5	270	49	72	23	23	.6	4.9	275
FEB												
02...	1640	676	623	3.5	280	55	71	24	24	.6	5.0	269
MAR												
10...	1810	579	622	6.5	270	55	69	24	24	.6	5.0	263
31...	1515	662	597	8.5	270	55	68	24	25	.7	6.0	260
APR												
28...	1710	683	587	7.0	260	55	68	23	26	.7	5.2	256
JUN												
02...	0900	498	519	12.0	250	50	65	22	23	.6	5.3	247
22...	1425	953	650	12.5	290	64	71	27	28	.7	6.8	274
AUG												
04...	1720	441	661	18.5	310	66	78	27	29	.7	6.6	292
SEP												
03...	1425	882	571	16.5	270	51	70	24	25	.7	5.1	272

DATE	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED ORTHO-PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT												
02...	95	14	.4	22	399	.54	777	.10	.01	.00	30	10
NOV												
03...	73	14	.4	20	365	.50	880	.25	.03	.01	0	20
DEC												
04...	76	13	.5	21	363	.49	892	.37	.01	.02	50	20
JAN												
05...	94	13	.4	20	388	.53	756	.41	.03	.03	50	10
FEB												
02...	91	14	.5	19	383	.52	699	.46	.08	.07	20	20
MAR												
10...	96	13	.4	21	384	.52	600	.33	.02	.01	0	20
31...	94	13	.5	20	381	.52	681	.31	.24	.18	0	20
APR												
28...	97	14	.5	19	387	.53	714	1.8	.00	.02	0	30
JUN												
02...	83	13	.4	20	354	.48	476	.18	.02	.02	30	40
22...	110	15	.4	22	416	.57	1070	.15	.04	.05	30	40
AUG												
04...	97	17	.5	25	425	.58	506	.15	.01	.03	20	20
SEP												
03...	83	14	.5	21	377	.51	898	.12	.02	.02	10	20

06018500 BEAVERHEAD RIVER NEAR TWIN BRIDGES, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	619	571	590	509	589	582	540	493	552	623	699	589
2	621	594	605	536	599	590	529	491	567	611	658	588
3	626	591	589	609	608	590	534	498	550	632	678	585
4	628	597	610	607	619	601	535	540	677	636	679	582
5	630	597	597	607	623	590	575	541	681	641	660	585
6	621	595	593	602	601	591	534	531	709	644	660	600
7	648	590	593	538	569	594	500	513	670	644	649	602
8	648	590	580	604	602	591	488	532	667	641	649	615
9	649	598	591	600	602	591	518	500	658	632	650	615
10	646	597	580	599	600	580	508	498	640	623	669	615
11	698	597	584	600	602	580	510	491	681	628	647	615
12	640	599	595	601	607	590	515	492	641	639	680	662
13	640	591	575	599	601	590	515	492	653	665	669	655
14	633	592	581	599	600	600	508	497	649	647	679	641
15	699	590	597	599	602	596	518	493	639	647	647	626
16	645	609	592	599	602	592	578	491	639	625	684	618
17	639	591	542	598	600	585	575	495	678	668	681	607
18	638	589	607	599	600	573	574	498	680	666	686	608
19	633	595	618	601	607	506	572	500	623	679	686	681
20	633	595	609	599	602	512	572	499	679	670	686	633
21	624	610	605	598	605	503	569	501	648	670	631	682
22	596	588	604	606	605	572	563	500	624	670	631	614
23	588	588	602	600	604	577	568	516	621	669	631	590
24	613	586	611	600	600	567	580	521	617	672	685	608
25	570	591	619	600	591	579	570	570	609	662	665	605
26	616	589	613	607	591	605	569	500	619	651	631	590
27	614	590	599	610	591	573	579	528	678	650	631	591
28	611	590	599	607	589	591	585	539	612	669	631	588
29	603	598	605	601	590	590	580	541	616	671	655	584
30	600	579	605	602	---	593	522	538	627	687	655	585
31	595	---	498	602	---	572	---	537	---	688	655	---
MONTH	628	593	593	595	600	579	546	512	640	652	661	612

YEAR MAX 709 MIN 488 MEAN 601

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.5	7.5	2.0	0.5	2.0	2.0	5.0	10.0	17.0	17.5	17.0	17.0
2	12.5	6.5	4.0	0.0	2.0	2.5	6.5	11.0	17.0	17.0	15.5	16.0
3	12.5	7.0	5.0	0.5	1.5	3.5	5.5	11.5	17.0	21.0	16.0	17.5
4	13.5	6.0	3.0	0.0	1.0	3.5	7.0	11.0	17.0	16.5	16.0	18.0
5	12.5	8.0	2.5	2.0	0.5	4.0	6.0	11.5	16.5	21.0	16.5	15.5
6	14.0	8.0	3.0	1.5	0.0	3.5	6.5	13.0	17.5	21.5	15.0	16.0
7	13.0	5.5	4.5	0.0	1.0	3.0	9.5	14.0	16.0	21.5	17.0	11.0
8	12.5	5.5	4.0	0.0	3.0	2.5	10.0	13.5	18.0	20.5	14.0	13.0
9	10.5	5.0	4.5	0.5	4.0	3.5	9.0	14.0	16.5	21.0	15.5	14.5
10	9.0	5.0	5.0	0.5	3.0	4.5	10.0	15.0	17.0	20.5	15.0	12.5
11	10.5	3.5	6.5	2.0	4.0	2.5	12.5	13.5	14.5	22.0	16.5	13.5
12	8.0	3.5	6.5	2.0	4.5	2.0	12.0	14.0	16.0	20.0	16.0	12.5
13	11.0	4.5	1.0	2.0	4.0	2.5	11.0	13.0	11.0	20.5	17.5	13.5
14	8.0	5.0	1.0	2.5	4.0	3.0	11.0	13.5	11.5	16.5	17.5	12.0
15	8.0	3.0	1.0	3.0	2.5	4.5	9.0	14.0	12.0	16.0	17.0	16.0
16	8.5	2.5	0.0	3.5	2.0	5.0	9.5	14.0	13.5	20.0	15.5	16.5
17	11.0	1.0	0.0	3.5	2.0	7.0	10.0	15.5	11.5	20.5	15.0	17.0
18	11.5	2.0	0.0	3.0	4.5	5.5	9.0	17.0	12.0	19.0	16.5	13.0
19	11.0	3.0	0.5	3.5	3.5	4.5	9.5	16.5	17.5	19.5	17.0	11.0
20	12.0	0.5	0.0	2.0	3.0	3.5	10.0	16.0	15.5	17.0	16.0	12.0
21	9.5	1.5	0.5	1.5	4.0	5.0	11.0	17.0	14.0	19.0	16.0	12.0
22	8.5	1.0	0.0	1.0	4.5	5.5	10.0	15.5	14.0	19.0	15.0	12.5
23	6.0	2.5	1.0	1.5	4.5	6.5	11.0	14.5	13.5	19.5	14.5	12.5
24	6.0	4.5	1.5	2.0	5.0	4.0	7.0	12.5	15.0	19.0	15.0	13.0
25	4.0	2.5	2.0	4.0	4.5	4.0	6.0	13.0	16.5	20.5	16.0	13.0
26	4.5	2.0	1.5	4.0	5.0	4.5	5.5	15.5	13.5	18.0	15.0	13.5
27	4.5	1.0	2.0	3.5	6.5	---	5.0	16.0	13.0	19.5	15.0	15.0
28	5.5	0.0	1.0	3.0	4.0	---	6.5	15.0	17.5	20.0	15.0	15.5
29	6.5	0.0	1.0	3.0	3.5	---	9.0	16.0	16.0	19.5	15.5	16.0
30	7.0	0.0	1.0	3.0	---	---	8.5	16.0	20.0	19.0	15.0	15.5
31	8.0	---	0.0	3.0	---	7.0	---	14.0	---	17.5	15.5	---
MONTH	9.5	3.5	2.0	2.0	3.0	4.0	8.5	14.0	15.5	19.5	16.0	14.0

YEAR MAX 22.0 MIN 0.0 MEAN 9.5

06019500 RUBY RIVER ABOVE RESERVOIR, NEAR ALDER, MT

LOCATION.--Lat 45°10'31", long 112°08'52", in SW¼SW¼ sec.31, T.7 S., R.4 W., Madison County, Hydrologic Unit 10020003, on left bank at Puller Hot Springs 0.4 mi (0.6 km) upstream from Cottonwood Creek, 6 mi (10 km) upstream from Ruby Dam, and 10.5 mi (16.9 km) south of Alder.

DRAINAGE AREA.--538 mi^2 (1,393 km^2).

PERIOD OF RECORD.--May 1938 to current year. Monthly discharge only for May 1938, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1938(M). WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,440.2 ft (1,658.17 m) above mean sea level (river-profile survey). Prior to Oct. 1, 1938, nonrecording gage at bridge 1,500 ft (457 m) downstream at datum 5.2 ft (1.58 m) lower. Oct. 1, 1938, to Aug. 5, 1955, water-stage recorder at site 500 ft (152 m) downstream at datum 0.5 ft (0.15 m) lower.

REMARKS.--Records good. Diversions for irrigation of about 3,000 acres (12.1 km^2) above station.

AVERAGE DISCHARGE.--38 years, 177 ft^3/s (5.013 m^3/s), 128,200 acre-ft/yr (158 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,670 ft^3/s (47.3 m^3/s) June 10, 1970, gage height, 5.62 ft (1.713 m); minimum daily, 35 ft^3/s (0.99 m^3/s) Jan. 23, 1962.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 640 ft^3/s (18.1 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 11	2000	1000	28.3	4.37	1.332	May 29	0700	887	25.1	4.24	1.292
May 15	1100	1090	30.9	4.50	1.372	June 2	0700	723	20.5	3.96	1.207
May 19	1600	*1290	36.5	*4.80	1.463	June 23	0200	723	20.5	3.94	1.201

Minimum daily discharge, 90 ft^3/s (2.55 m^3/s) Feb. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	147	163	120	120	118	110	166	208	619	313	187	133
2	147	170	140	110	118	100	183	253	644	302	180	130
3	147	166	150	100	118	95	142	295	624	284	176	128
4	144	163	150	110	111	100	160	476	629	272	170	128
5	142	160	144	120	105	105	202	461	562	268	163	128
6	142	160	142	133	100	108	246	399	509	264	157	136
7	144	157	142	133	90	111	284	447	485	253	150	150
8	157	144	144	133	95	114	292	539	447	249	150	142
9	157	128	150	136	100	114	313	590	434	235	150	130
10	157	133	147	133	108	115	221	649	403	225	147	130
11	160	139	144	130	114	110	225	887	416	218	142	133
12	157	133	142	130	118	114	280	806	447	264	147	157
13	163	144	128	130	114	114	292	696	461	253	144	150
14	173	150	121	128	114	118	246	966	425	228	139	142
15	180	153	120	130	114	114	225	990	429	218	136	142
16	173	157	110	136	114	121	205	817	522	215	136	144
17	173	153	120	139	114	180	187	865	581	215	139	144
18	173	147	128	136	114	249	176	1080	553	232	139	160
19	170	136	130	130	111	228	180	1200	495	260	142	163
20	157	121	136	125	111	136	173	1060	535	232	142	153
21	157	136	128	128	108	130	176	1000	553	221	142	147
22	173	133	128	128	108	125	176	920	581	212	139	147
23	173	133	125	128	114	121	187	876	600	208	147	157
24	157	147	125	125	114	118	183	859	480	205	173	176
25	153	144	128	121	114	125	208	796	425	205	150	163
26	173	142	128	118	118	108	228	750	394	205	144	153
27	170	144	128	128	128	114	196	707	374	202	144	150
28	166	139	121	125	125	108	180	796	350	190	142	144
29	166	157	128	125	114	111	180	801	320	176	136	144
30	173	130	128	121	---	108	187	685	313	183	136	142
31	173	---	130	118	---	125	---	654	---	183	136	---
TOTAL	4997	4382	4105	3907	3244	3849	6299	22528	14610	7190	4625	4346
MEAN	161	146	132	126	112	124	210	727	487	232	149	145
MAX	180	170	150	139	128	249	313	1200	644	313	187	176
MIN	142	121	110	100	90	95	142	208	313	176	136	128
AC-FT	9910	8690	8140	7750	6430	7630	12490	44680	28980	14260	9170	8620

CAL YR 1975 TOTAL 94634 MEAN 259 MAX 1490 MIN 85 AC-FT 187700
WTR YR 1976 TOTAL 84082 MEAN 230 MAX 1200 MIN 90 AC-FT 166800

06020600 RUBY RIVER BELOW RESERVOIR, NEAR ALDER, MT

LOCATION.--Lat 45°14'32", long 112°06'36", in SE¼NE¼ sec.8, T.7 S., R.4 W., Madison County, Hydrologic Unit 10020003, on right bank 0.2 mi (0.3 km) downstream from Ruby Dam and 5.7 mi (9.2 km) south of Alder.

DRAINAGE AREA.--596 mi^2 (1,544 km^2).

PERIOD OF RECORD.--November 1962 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,290 ft (1,612 m) above mean sea level (from river-profile map).

REMARKS.--Records good. Flow regulated by Ruby River Reservoir (see p.577). Diversions for irrigation of about 3,500 acres (14.2 km^2) above station.

AVERAGE DISCHARGE.--13 years, 227 ft^3/s (6.429 m^3/s), 164,500 acre-ft/yr (203 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,610 ft^3/s (45.6 m^3/s) June 10, 1970, gage height, 5.37 ft (1.637 m); minimum, 1.4 ft^3/s (0.04 m^3/s) Dec. 5, 1974, dam closure, result of discharge measurement; minimum daily, 19 ft^3/s (0.54 m^3/s) Feb. 15-19, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,190 ft^3/s (33.7 m^3/s) May 19, gage height, 4.34 ft (1.323 m); minimum daily, 56 ft^3/s (1.59 m^3/s) Feb. 17-24, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	364	118	97	166	73	57	73	204	713	469	361	346
2	359	120	88	166	73	57	73	204	642	478	359	339
3	355	113	88	166	75	57	73	204	645	473	381	338
4	355	107	107	166	75	57	73	204	731	472	414	338
5	355	107	124	166	75	57	73	265	670	469	411	338
6	351	107	124	166	75	57	80	364	580	469	410	336
7	351	109	124	166	75	57	90	404	527	469	409	334
8	346	109	122	166	75	57	90	400	491	468	410	334
9	313	109	122	166	73	57	92	400	456	466	443	343
10	216	109	122	166	75	57	91	400	440	471	441	357
11	216	109	122	163	73	57	92	395	438	470	439	355
12	216	109	122	163	73	57	100	398	467	469	438	351
13	216	107	122	163	73	57	113	401	485	468	438	346
14	216	109	122	158	73	58	113	524	467	467	437	346
15	216	109	122	125	73	58	115	919	461	452	434	344
16	216	109	98	129	62	58	132	903	491	410	432	342
17	216	109	129	129	56	58	154	834	612	409	429	342
18	216	109	156	129	56	58	155	935	623	409	429	305
19	213	109	172	129	56	58	153	1120	580	373	424	253
20	197	109	172	129	56	58	155	1130	557	338	419	232
21	186	107	172	129	56	58	155	1060	614	337	419	232
22	186	107	172	90	56	58	156	1020	639	335	419	232
23	189	107	169	71	56	58	155	993	729	334	417	226
24	189	107	169	71	56	58	158	973	601	299	414	226
25	189	105	169	71	57	58	158	921	499	246	414	226
26	189	105	166	71	57	58	161	884	453	246	379	226
27	145	105	166	73	57	58	176	802	417	255	351	226
28	120	105	166	73	57	58	211	838	440	268	351	226
29	120	107	166	73	56	62	210	860	451	268	349	223
30	120	105	166	73	---	73	209	830	402	268	346	219
31	120	---	166	73	---	73	---	775	---	304	346	---
TOTAL	7256	3256	4302	3945	1903	1819	3839	20564	16321	12119	12563	8881
MEAN	234	109	139	127	65.6	58.7	128	663	544	391	405	296
MAX	364	120	172	166	75	73	211	1130	731	478	443	357
MIN	120	105	88	71	56	57	73	204	402	246	346	219
AC-FT	14390	6460	8530	7820	3770	3610	7610	40790	32370	24040	24920	17620

CAL YR 1975 TOTAL 103048 MEAN 282 MAX 1460 MIN 44 AC-FT 204400
WTR YR 1976 TOTAL 96768 MEAN 264 MAX 1130 MIN 56 AC-FT 191900

06024590 WISE RIVER NEAR WISE RIVER, MT

LOCATION.--Lat 45°42'49", long 113°01'28", in NE¼ sec.36, T.1 S., R.12 W., Beaverhead County, Hydrologic Unit 10020004, on left bank just downstream from bridge on old county road, 6.5 mi (10.5 km) southwest of Wise River.

DRAINAGE AREA.--214 mi^2 (554 km^2).

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 6,112.52 ft (1,863.096 m) above mean sea level (from U.S. Forest Service bench mark).

REMARKS.--Records good. Minor diversions for irrigation above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,730 ft^3/s (77.3 m^3/s) June 16, 1974, gage height, 8.43 ft (2.569 m); minimum, 23 ft^3/s (0.65 m^3/s) Apr. 8, Nov. 20, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 14, 1927, when Wise River Reservoir dam failed, exceeded all other known floods at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 350 ft^3/s (9.91 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 25	1000	*2200	62.3	7.50	2.286	June 22	2000	1240	35.1	6.33	1.929
May 28	2100	--	--	*7.60	2.316	Aug. 24	0300	412	11.7	4.07	1.241
June 11	1900	1920	54.4	7.20	2.195						

Minimum discharge, 40 ft^3/s (1.13 m^3/s) Mar. 30, gage height, 2.54 ft (0.774 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	89	112	77	57	56	50	50	153	1420	654	148	108
2	88	111	85	60	58	42	49	191	1370	604	148	106
3	87	111	88	62	56	44	49	245	1430	540	147	102
4	87	113	88	63	50	46	51	355	1440	498	145	102
5	88	110	82	63	45	50	58	347	1400	470	137	99
6	91	111	80	62	48	52	69	360	1450	448	133	102
7	96	106	82	63	55	50	78	407	1550	430	127	137
8	100	93	84	63	59	50	99	508	1620	409	127	112
9	97	82	87	63	58	49	104	670	1640	388	121	104
10	98	90	83	63	57	49	106	782	1540	375	116	100
11	101	87	79	63	57	49	128	998	1740	359	113	104
12	103	84	77	61	57	48	151	901	1510	369	115	149
13	105	89	71	61	57	49	163	947	1300	358	114	133
14	103	93	65	61	56	48	166	1330	1090	310	114	114
15	101	95	71	61	56	50	171	1360	979	282	110	108
16	101	95	70	63	55	48	153	1260	947	257	126	104
17	103	85	68	64	55	49	142	1390	990	234	120	100
18	109	82	69	63	54	50	137	1710	1010	248	120	142
19	107	73	67	58	54	50	133	1740	884	279	146	231
20	110	62	64	57	53	48	133	1690	968	250	120	151
21	184	65	63	60	50	49	126	1610	1060	251	110	132
22	239	68	63	60	52	49	124	1670	1140	223	104	141
23	140	77	65	62	52	48	120	1690	1040	204	179	189
24	115	83	66	59	52	48	126	1790	832	194	320	145
25	108	81	68	58	52	48	144	2050	741	187	174	132
26	122	81	68	58	51	49	126	1790	605	178	146	125
27	110	81	66	60	51	48	122	1610	610	167	130	119
28	114	78	64	60	51	47	122	1990	583	157	120	115
29	116	75	65	59	51	47	120	1870	583	149	116	111
30	116	74	65	59	---	46	130	1610	625	147	112	107
31	112	---	62	58	---	48	---	1490	---	148	112	---
TOTAL	3440	2647	2252	1884	1558	1498	3450	36514	34157	9787	4170	3724
MEAN	111	88.2	72.6	60.8	53.7	48.3	115	1178	1139	315	135	124
MAX	239	113	88	64	59	52	171	2050	1740	654	320	231
MIN	87	62	62	57	45	42	49	153	583	147	104	99
AC-FT	6820	5250	4470	3740	3090	2970	6840	72430	67750	19370	8270	7390

CAL YR 1975 TOTAL 86430 MEAN 237 MAX 1880 MIN 26 AC-FT 171400
WTR YR 1976 TOTAL 105061 MEAN 287 MAX 2050 MIN 42 AC-FT 208400

06025500 BIG HOLE RIVER NEAR MELROSE, MT

LOCATION.--Lat 45°31'36", long 112°42'03", in SE¼SE¼SW¼ sec.34, T.3 S., R.9 W., Madison County, Hydrologic Unit 10020004, on left bank at downstream side of bridge on Interstate Highway 15 and U.S. Highway 91, 0.1 mi (0.2 km) downstream from Rock Creek, and 7 mi (11 km) south of Melrose.

DRAINAGE AREA.--2,476 mi^2 (6,413 km^2).

PERIOD OF RECORD.--October 1923 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,032.87 ft (1,534.018 m) above mean sea level. Prior to June 14, 1927, water-stage recorder, and July 17, 1927, to Sept. 30, 1931, nonrecording gage, at site 1.7 mi (2.7 km) upstream at different datum.

REMARKS.--Records good except those for winter period, which are poor. Diversions for irrigation of about 136,000 acres (550 km^2) above station.

AVERAGE DISCHARGE.--53 years, 1,166 ft^3/s (33.02 m^3/s), 844,800 acre-ft/yr (1.04 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,000 ft^3/s (651 m^3/s) June 14, 1927, when Wise River Reservoir dam failed (gage-height, 14.0 ft or 4.27 m, from floodmark, site and datum then in use), from rating curve extended above 8,000 ft^3/s (227 m^3/s); maximum discharge unaffected by dam failure, 14,300 ft^3/s (405 m^3/s) June 10, 1972, gage height, 8.04 ft (2.451 m); minimum observed, 49 ft^3/s (1.39 m^3/s) Aug. 17, 1931, gage height, 0.70 ft (0.213 m), site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,400 ft^3/s (96.3 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 14	0330	10,500	297	*6.75	2.057	June 13	1815	8,150	231	5.92	1.804
May 20	1330	*10,800	306	6.65	2.027	June 22	2130	6,390	181	5.14	1.567

Minimum daily discharge, 300 ft^3/s (8.50 m^3/s) Mar. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	597	1190	600	469	520	400	665	3790	7680	2030	1020	727
2	599	1200	800	430	510	350	590	4560	6970	2720	1060	683
3	606	1240	1000	400	510	300	568	4960	6600	2540	1080	637
4	607	1310	1100	400	490	330	627	5780	6440	2380	1090	606
5	605	1260	1040	450	470	360	710	5970	6190	2290	1070	591
6	602	1200	990	440	450	400	797	6040	6060	2170	1030	604
7	645	1160	934	420	470	450	899	6000	6290	2080	961	661
8	755	1070	972	430	460	460	1110	6310	6380	2020	949	695
9	828	932	1160	440	500	470	1530	6620	6490	1980	929	731
10	853	837	1180	450	530	500	1680	7230	6490	1910	893	704
11	874	860	1080	430	540	480	2490	8540	7110	1830	860	702
12	937	794	1010	420	530	450	3580	9050	7720	1930	822	798
13	1020	758	857	410	510	470	6020	9440	7850	2110	767	870
14	1140	811	741	400	490	490	7250	9650	7200	2010	748	896
15	1200	907	640	450	470	450	6870	10000	6130	1830	724	836
16	1160	1040	550	500	500	470	4700	10300	5310	1640	746	775
17	1090	930	500	510	480	490	3420	9930	4850	1510	797	733
18	1070	845	500	520	500	620	3200	10100	5200	1530	801	855
19	1030	673	510	500	480	733	3000	10300	5300	1820	840	1180
20	1010	581	520	520	450	561	2630	10500	4950	1990	821	1380
21	1090	540	530	500	470	547	2520	9970	5210	1880	789	1210
22	1610	470	536	500	480	533	2280	9380	6010	1780	715	1060
23	1690	520	540	500	500	540	2180	9340	6220	1630	775	1090
24	1470	640	614	480	530	512	2240	9290	5810	1460	1310	1120
25	1170	700	711	500	550	526	3110	9640	4860	1380	1360	1100
26	1180	710	716	500	540	512	3000	9350	4040	1310	1260	1040
27	1100	709	715	510	520	519	2120	8970	3530	1240	1090	989
28	1040	670	654	520	500	512	1820	9200	3150	1180	978	958
29	1040	600	692	530	450	505	2120	9450	2800	1090	884	927
30	1150	450	675	530	---	505	2950	8900	2800	1040	811	889
31	1190	---	586	530	---	554	---	8560	---	1030	768	---
TOTAL	30958	25590	23653	14589	14420	14999	76076	257120	171780	56140	28748	26047
MEAN	999	853	763	471	497	484	2563	8294	5726	1811	927	868
MAX	1690	1310	1180	530	550	733	7250	10500	7850	2030	1360	1380
MIN	597	450	500	400	450	300	568	3790	2800	1030	715	591
AC-FT	61410	50770	46920	28940	28600	29750	152300	510000	340700	111400	57020	51660

CAL YR 1975 TOTAL 607271 MEAN 1664 MAX 12100 MIN 160 AC-FT 1205000
WTR YR 1976 TOTAL 740928 MEAN 2024 MAX 10500 MIN 300 AC-FT 1470000

06026000 BIRCH CREEK NEAR GLEN, MT

LOCATION.--Lat 45°22'46", long 112°47'48", in SE¼SE¼ sec.23, T.5 S., R.10 W., Beaverhead County, Hydrologic Unit 10020004, Beaverhead National Forest, on left bank 2.3 mi (3.7 km) downstream from Sheep Creek and 8.5 mi (13.7 km) southwest of Glen.
DRAINAGE AREA.--36.0 mi^2 (93.2 km^2).
PERIOD OF RECORD.--May 1946 to September 1953, April 1955 to September 1976 (discontinued). Monthly discharge only for May 1946, published in WSP 1309. Prior to October 1950, published as "near Reichle."
GAGE.--Water-stage recorder. Concrete control since May 19, 1966. Altitude of gage is 5,862 ft (1,786.7 m), from plane-table survey. Prior to Nov. 16, 1949, at site 1.5 mi (2.4 km) upstream at different datum.
REMARKS.--Records fair. Some regulation at lakes in headwaters. Minor diversions for irrigation above station. Recorded diversions from Willow Creek basin into Birch Creek above station for current year are listed above.
AVERAGE DISCHARGE.--28 years, 29.4 ft^3/s (0.833 m^3/s), 21,300 acre-ft/yr (26.3 hm^3/yr), unadjusted.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 427 ft^3/s (12.1 m^3/s) July 5, 1975; maximum gage height recorded, 5.49 ft (1.673 m) June 27, 1967; minimum discharge, 0.8 ft^3/s (0.023 m^3/s) Nov. 17, 1958.
EXTREMES FOR CURRENT YEAR.--Maximum discharge, 215 ft^3/s (6.089 m^3/s) June 11, gage height, 4.94 ft (1.506 m) in gage well, minimum, 1.7 ft^3/s (0.049 m^3/s) Nov. 22, gage height, 2.99 ft (0.911 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	31	9.2	9.0	8.4	7.0	8.1	13	113	122	55	21
2	13	30	12	8.8	8.4	6.3	7.5	13	118	117	55	20
3	13	30	12	8.7	8.4	7.0	8.0	15	133	109	56	20
4	13	28	13	8.5	5.6	6.8	10	19	130	107	54	19
5	13	28	18	9.0	4.1	6.9	11	18	123	107	53	19
6	13	24	18	9.6	4.3	7.2	13	18	112	104	52	22
7	14	21	19	10	4.9	7.6	14	20	90	94	51	21
8	16	18	19	9.9	6.1	7.6	14	27	95	92	50	17
9	15	13	18	10	7.7	7.6	14	36	104	89	48	16
10	15	15	18	9.6	8.0	8.6	12	46	147	90	45	16
11	17	15	17	9.5	8.4	7.7	13	64	132	88	44	21
12	17	12	15	9.3	8.8	6.7	14	54	97	86	43	22
13	19	14	10	9.2	8.4	7.4	13	63	88	81	40	16
14	22	15	8.5	8.9	8.4	7.3	13	99	82	77	39	14
15	21	18	9.6	9.2	8.0	7.0	12	93	82	75	37	14
16	21	17	8.0	9.2	7.7	7.2	11	101	86	75	34	13
17	20	15	5.2	9.2	8.0	8.9	11	116	93	73	29	13
18	21	14	5.3	8.8	7.7	10	13	125	96	69	31	43
19	23	8.8	5.1	8.0	7.8	7.8	9.5	129	97	64	30	35
20	24	4.0	5.0	7.3	7.5	6.9	9.8	136	112	81	26	29
21	62	3.4	4.9	7.0	7.3	7.1	8.9	125	120	72	25	27
22	51	2.7	4.9	8.6	7.4	7.0	9.2	109	149	67	23	30
23	38	6.1	5.3	8.4	7.3	6.7	8.6	123	134	62	44	30
24	36	7.4	6.3	8.4	7.0	6.6	9.0	134	123	59	34	28
25	36	5.9	8.4	7.0	7.0	8.6	10	148	115	55	22	25
26	37	8.0	7.1	6.6	7.0	6.5	9.5	150	108	53	20	24
27	34	8.4	7.4	7.7	8.8	6.3	9.7	149	119	51	19	22
28	34	8.8	8.8	8.8	8.8	8.0	9.0	152	132	62	20	20
29	34	5.9	9.3	8.8	8.8	5.9	9.2	139	136	80	19	19
30	33	6.3	11	8.4	---	6.5	10	127	141	81	20	17
31	31	---	11	8.4	---	8.5	---	122	---	60	22	---
TOTAL	757	431.3	327.3	287.6	209.8	223.2	321.0	2683	3407	2502	1140	653
MEAN	24.7	14.4	10.6	8.63	7.23	7.20	10.7	86.5	114	80.7	36.8	21.8
MAX	62	31	19	10	8.8	10	14	152	149	122	56	43
MIN	13	2.7	4.9	6.6	4.1	5.9	7.5	13	82	51	19	13
AC-FT	1520	855	649	531	416	443	637	5320	6780	4960	2260	1300
(†)	102	48	0	0	0	0	0	1350	2670	1880	249	461

CAL YR 1975 TOTAL 14399.7 MEAN 39.5 MAX 379 MIN 2.7 AC-FT 28580
WTR YR 1976 TOTAL 12932.2 MEAN 35.3 MAX 152 MIN 2.7 AC-FT 25650

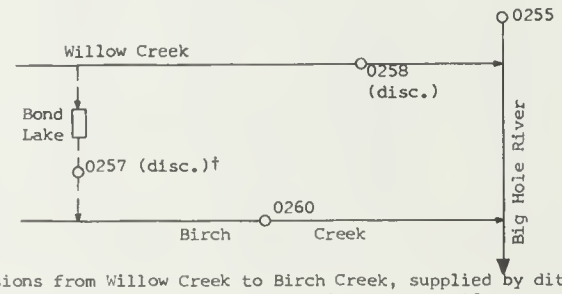
† Diversions, in acre-feet, into Birch Creek from Willow Creek basin.

EXPLANATION

o 0255

Gaging station

Numbers are those given in the station descriptions of this report except where indicated as discontinued.



† Diversions from Willow Creek to Birch Creek, supplied by ditch rider, published as footnote to 06 0260 00 since 1967.

06035000 WILLOW CREEK NEAR HARRISON, MT

LOCATION.--Lat 45°43'21", long 111°44'17", in SW¼NW¼ sec.28, T.1 S., R.1 W., Madison County, Hydrologic Unit 10020005, on right bank 2.2 mi (3.5 km) upstream from Willow Creek Dam, 2.5 mi (4.0 km) northeast of Harrison, and 11 mi (18 km) upstream from mouth.

DRAINAGE AREA.--83.8 mi^2 (217 km^2).

PERIOD OF RECORD.--April 1938 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1559: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 4,750 ft (1,448 m), from topographic map. Prior to Oct. 8, 1946, water-stage recorder at datum 0.22 ft (0.067 m) higher, with different concrete control.

REMARKS.--Records good except those for winter period and period of no gage-height record (Jan.31 to Mar. 4), which are poor. Diversions for irrigation of about 12,500 acres (50.6 km^2) of which 3,500 acres (14.2 km^2) is in Norwegian Creek drainage.

AVERAGE DISCHARGE.--38 years, 40.5 ft^3/s (1.147 m^3/s), 29,340 acre-ft/yr (36.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 813 ft^3/s (23.0 m^3/s) Feb. 3, 1963, gage height, 4.24 ft (1.292 m), from floodmarks, from rating curve extended above 300 ft^3/s (8.50 m^3/s); minimum, 1.4 ft^3/s (0.040 m^3/s) Sept. 17, 1956, gage height, 0.39 ft (0.119 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 337 ft^3/s (9.54 m^3/s) Sept. 18, gage height, 2.58 ft (0.786 m); minimum, 10.4 ft^3/s (0.295 m^3/s) Sept. 2, 5, 6, gage height, 0.55 ft (0.168 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	53	40	38	37	38	37	89	88	119	21	14
2	24	52	47	38	37	33	39	81	75	126	30	12
3	23	51	65	39	36	24	42	76	70	124	25	12
4	23	48	55	40	34	25	55	105	69	118	25	12
5	25	47	49	41	30	26	52	101	61	114	25	12
6	30	45	49	42	35	26	47	92	70	102	24	14
7	32	43	46	41	40	27	48	87	86	92	22	26
8	40	39	48	42	43	27	50	97	92	83	24	21
9	46	37	49	43	45	27	55	110	97	77	24	21
10	41	43	48	42	48	36	53	125	101	72	23	20
11	42	38	47	43	49	39	54	176	127	72	21	29
12	45	58	43	44	49	32	56	169	107	87	23	73
13	59	40	43	43	48	35	58	162	117	77	21	37
14	67	33	44	45	48	33	58	194	89	63	19	31
15	65	33	45	47	47	33	55	194	62	53	19	27
16	55	37	44	48	47	41	56	173	69	47	19	28
17	49	36	42	47	46	68	56	175	83	42	19	28
18	47	35	46	46	45	78	53	206	96	66	17	167
19	45	35	44	45	44	51	49	215	76	80	17	174
20	45	31	42	48	42	51	46	214	87	55	16	97
21	79	28	43	49	42	35	45	207	98	64	15	81
22	93	29	44	48	43	33	47	190	178	53	13	78
23	71	31	47	47	46	32	57	187	176	45	19	80
24	62	34	48	43	47	32	52	193	131	46	31	79
25	59	33	49	44	47	31	57	194	111	46	19	79
26	63	32	48	45	44	31	60	176	99	47	15	79
27	59	31	48	47	43	31	58	154	91	43	15	75
28	55	27	47	48	42	32	60	159	86	35	14	71
29	56	25	47	45	41	33	75	146	84	30	14	69
30	56	30	45	38	---	33	80	127	90	29	14	68
31	55	---	40	37	---	34	---	110	---	23	15	---
TOTAL	1536	1134	1442	1353	1245	1107	1610	4684	2863	2130	618	1614
MEAN	49.5	37.8	46.5	43.6	42.9	35.7	53.7	151	95.4	68.7	19.9	53.8
MAX	93	58	65	49	49	78	80	215	176	126	31	174
MIN	23	25	40	37	30	24	37	76	61	23	13	12
AC-FT	3050	2250	2860	2680	2470	2200	3190	9290	5680	4220	1230	3200

CAL YR 1975 TOTAL 29215 MEAN 80.0 MAX 518 MIN 16 AC-FT 57950
WTR YR 1976 TOTAL 21336 MEAN 58.3 MAX 215 MIN 12 AC-FT 42320

06038500 MADISON RIVER BELOW HEBGEN LAKE, NEAR GRAYLING, MT

LOCATION.--Lat 44°52'00", long 111°20'15", near northeast corner of sec.22, T.11 S., R.3 E., Gallatin County, Hydrologic Unit 10020007, on right bank 1,500 ft (457 m) downstream from Hebgen Dam, 8 mi (13 km) northwest of Grayling, 17 mi (27 km) upstream from West Fork, and at mile 103 (166 km).

DRAINAGE AREA.--905 mi^2 (2,344 km^2).

PERIOD OF RECORD.--June 1909 to current year. Prior to October 1938 adjusted runoff only, published in WSP 1309. Prior to October 1949, published as "below Hebgen Reservoir".

REVISED RECORDS.--WSP 1509: 1948. WSP 1559: Drainage area. WSP 1629: 1943. WSP 1709: 1959. WSP 1729: 1943.

GAGE.--Water-stage recorder. Datum of gage is 6,448.47 ft (1,965.494 m) above mean sea level (after 1959 earthquake). Prior to July 13, 1943, nonrecording gage in stilling well.

REMARKS.--Records excellent. Flow completely regulated by Hebgen Lake (see p.577). Diversions for irrigation of about 1,100 acres (4.45 km^2) above station.

AVERAGE DISCHARGE.--67 years, 999 ft^3/s (28.29 m^3/s), 14.99 in/yr (381 mm/yr), 723,800 acre-ft/yr (892 hm^3/yr), adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,200 ft^3/s (289 m^3/s) Aug. 17, 1959, caused by wave over Hebgen Dam during earthquake (gage height, 5.3 ft or 1.62 m, from floodmark), from rating curve extended above 3,500 ft^3/s (99.1 m^3/s) on basis of slope-area measurement of peak flow; minimum daily, 5.0 ft^3/s (0.142 m^3/s) May 9-12, 1960.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,420 ft^3/s (68.5 m^3/s) Oct. 21, gage height, 2.70 ft (0.823 m); minimum daily, 709 ft^3/s (20.1 m^3/s) June 26-28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1250	1740	1040	940	940	940	1970	1940	1440	763	1050	1030
2	1240	1820	1040	940	940	940	1960	1970	1440	763	1050	908
3	1240	1820	1050	940	940	940	1990	2010	1450	765	1050	838
4	1240	1800	1070	940	940	940	2010	2010	1450	767	1050	839
5	1240	1740	1070	940	940	940	2010	2010	1460	769	1050	839
6	1240	1710	1070	940	940	940	1990	2010	1470	771	1050	839
7	1240	1680	1070	940	940	940	1990	2010	1220	771	1050	1060
8	1220	1680	1070	940	940	940	1990	2000	1040	772	1050	1210
9	1220	1680	1070	940	940	898	1990	2010	1040	754	1050	1210
10	1450	1670	1070	940	940	848	1970	1920	1050	743	1040	1210
11	1850	1670	1050	940	940	848	1960	1770	1050	744	1040	1210
12	1850	1670	1010	940	940	848	1920	1700	1060	744	956	1210
13	1850	1650	1010	940	940	848	1920	1530	1060	745	889	1210
14	1830	1650	1010	940	940	848	1910	1500	1030	746	888	1210
15	1830	1650	1030	940	940	1200	1910	1510	1010	748	888	1210
16	1820	1640	1010	940	940	1450	1910	1520	1010	748	889	1210
17	1820	1640	1010	940	940	1450	1940	1520	853	750	888	1210
18	1820	1640	1010	940	940	1450	2010	1530	751	1060	889	1250
19	1800	1620	1010	940	940	1450	2010	1500	752	1120	888	1380
20	1780	1620	1010	940	940	1450	2010	1480	755	1300	980	1370
21	1800	1620	1010	940	940	1440	2010	1490	759	1310	1040	1370
22	1770	1610	1010	940	940	1520	1990	1500	761	1300	1040	1370
23	1770	1610	1010	940	940	1720	1990	1510	764	1300	1040	1370
24	1750	1610	1010	940	940	1890	1990	1520	766	1300	1090	1390
25	1750	1610	1010	940	940	2010	1970	1530	731	1300	1130	1380
26	1740	1590	1010	940	940	1990	1970	1540	709	1300	1130	1380
27	1740	1590	1010	940	940	1990	1970	1530	709	1300	1130	1380
28	1740	1590	1010	940	940	1990	1970	1500	709	1150	1130	1370
29	1720	1590	971	940	940	1990	1960	1460	728	1040	1130	1370
30	1720	1340	940	940	---	1970	1950	1420	762	1050	1070	1540
31	1720	---	940	940	---	1970	---	1430	---	1050	1030	---
TOTAL	50050	49550	31711	29140	27260	41588	59140	51880	29789	29743	31645	36373
MEAN	1615	1652	1023	940	940	1342	1971	1674	993	959	1021	1212
MAX	1850	1820	1070	940	940	2010	2010	2010	1470	1310	1130	1540
MIN	1220	1340	940	940	940	848	1910	1420	709	743	888	838
AC-FT	99270	98280	62900	57800	54070	82490	117300	102900	59090	59000	62770	72150
MEAN†	1,022	1,010	1,023	940	940	806	966	2,802	2,593	1,241	1,021	1,105
CFSM†	1.13	1.12	1.13	1.04	1.04	.89	1.07	3.10	2.87	1.37	1.13	1.22
IN†	1.30	1.24	1.30	1.20	1.12	1.03	1.19	3.57	3.20	1.58	1.30	1.36
AC-FT†	62,870	60,080	62,900	57,800	54,070	49,590	57,500	172,300	154,300	76,300	62,770	65,750

OBSERVED

CAL YR 1975	TOTAL	433,134	MEAN	1,187	MAX	1,850	MIN	447	AC-FT	859,100
WTR YR 1976	TOTAL	467,869	MEAN	1,278	MAX	2,010	MIN	709	AC-FT	928,000

ADJUSTED

CAL YR 1975	TOTAL	452,690	MEAN	1,237	CFSM	1.37	IN	18.60	AC-FT	897,900
WTR YR 1976	TOTAL	472,001	MEAN	1,290	CFSM	1.42	IN	19.39	AC-FT	999,100

† Adjusted for change in contents in Hebgen Lake.

06040300 JACK CREEK NEAR ENNIS, MT

LOCATION.--Lat 45°21'23", long 111°34'51", in NE¼SE¼ sec.34, T.5 S., R.1 E., Madison County, Hydrologic Unit 10020007, Beaverhead National Forest, on left bank 800 ft (244 m) upstream from bridge at forest boundary, 8.8 mi (14.2 km) east of Ennis.

DRAINAGE AREA.--51.5 mi^2 (133 km^2).

PERIOD OF RECORD.--September 1973 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,600 ft (1,707 m), from topographic map.

REMARKS.--Records good. No regulation or diversion above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 555 ft^3/s (15.7 m^3/s) June 14, 1974, gage height, 3.97 ft (1.210 m) in gage well, about 4.97 ft (1.515 m) from outside gage; minimum, 5.0 ft^3/s (0.142 m^3/s) Mar. 7, 1975, gage height, 1.84 ft (0.561 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 150 ft^3/s (4.25 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 6	1200	ice jam		*3.75	1.143	June 16	1030	258	7.31	3.03	0.924
May 4	1730	156	4.42	3.03	0.924	June 22	1400	262	7.42	3.04	0.927
May 11	0800	*366	10.4	3.46	1.055						

Minimum discharge, 6.5 ft^3/s (0.184 m^3/s) Mar.30, gage height, 1.92 ft (0.585 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	26	23	15	15	15	16	21	174	140	71	34
2	26	28	24	17	15	12	15	29	182	140	67	32
3	26	29	23	17	15	13	15	42	186	123	65	31
4	26	29	22	18	14	15	16	146	186	120	63	30
5	26	28	21	18	12	14	20	110	182	120	56	28
6	25	28	21	17	10	15	23	107	182	113	54	44
7	26	26	21	17	15	15	28	117	182	110	54	41
8	30	23	21	17	16	15	35	136	170	110	54	32
9	29	18	21	17	16	15	36	197	166	100	50	31
10	29	23	21	16	15	15	30	197	159	95	47	30
11	29	21	20	17	15	14	38	262	156	95	47	31
12	28	18	20	17	15	13	46	133	153	107	46	36
13	29	23	17	16	15	14	49	133	156	95	44	31
14	30	23	11	17	15	14	39	182	136	84	41	29
15	29	24	21	17	15	14	34	170	136	76	42	29
16	29	24	18	17	15	14	28	150	186	71	41	28
17	30	23	17	17	15	15	23	163	166	73	38	28
18	30	21	20	17	15	15	22	205	156	84	38	47
19	29	14	18	15	15	15	21	254	153	84	39	35
20	29	15	18	15	15	14	21	241	170	76	38	31
21	47	17	18	17	14	15	19	232	174	71	36	30
22	49	20	18	17	15	14	20	232	205	71	36	32
23	35	24	18	17	15	14	20	232	189	67	41	34
24	29	24	18	16	15	14	20	219	166	65	41	32
25	29	21	19	16	15	14	25	210	153	65	36	30
26	30	21	18	16	15	14	22	186	140	65	36	29
27	26	21	18	16	15	15	19	186	133	60	36	29
28	26	19	15	16	15	14	17	193	133	58	35	29
29	26	18	20	16	15	14	17	186	136	63	34	29
30	28	20	18	16	---	13	17	182	136	63	32	28
31	28	---	16	15	---	15	---	174	---	65	34	---
TOTAL	916	669	594	512	427	442	751	5227	4902	2729	1392	960
MEAN	29.5	22.3	19.2	16.5	14.7	14.3	25.0	169	163	88.0	44.9	32.0
MAX	49	29	24	18	16	15	49	262	205	140	71	47
MIN	25	14	11	15	10	12	15	21	133	58	32	28
AC-FT	1820	1330	1180	1020	847	877	1490	10370	9720	5410	2760	1900

CAL YR 1975 TOTAL 16883.4 MEAN 46.3 MAX 290 MIN 8.4 AC-FT 33490
WTR YR 1976 TOTAL 19521.0 MEAN 53.3 MAX 262 MIN 10 AC-FT 38720

06041000 MADISON RIVER BELOW ENNIS LAKE, NEAR MCALLISTER, MT

LOCATION.--Lat 45°29'25", long 111°38'00", in NW¼ sec.17, T.4 S., R.1 E., Madison County, Hydrologic Unit 10020007, on right bank 500 ft (152 m) downstream from Madison powerplant, 1.5 mi (2.4 km) downstream from Ennis Lake, and 5.7 mi (9.2 km) northeast of McAllister.

DRAINAGE AREA.--2,186 mi^2 (5,662 km^2).

PERIOD OF RECORD.--October 1901 to December 1905, October 1906 to current year. Prior to October 1938 adjusted monthly runoff only, published in WSP 1309. Published as "below Madison Reservoir" 1938-49. Records published as "near Red Bluff" 1890-94 and as "near Norris" 1910 are not equivalent and are published as "near Norris" in WSP 1309.

REVISED RECORDS.--WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,700 ft (1,433 m), from topographic map. Prior to May 7, 1941, nonrecording gage in wooden stilling well at present site at different datum. May 7, 1941, to Jan. 13, 1945, nonrecording gages in concrete stilling well at present site and datum.

REMARKS.--Records good. Flow regulated by Hebgen and Ennis Lakes (see p.577-578). Diversions for irrigation of about 23,000 acres (93.1 km^2) above station.

AVERAGE DISCHARGE.--38 years (1938-76), 1,766 ft^3/s (50.01 m^3/s), 1,279,000 acre-ft/yr (1.58 km^3/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,550 ft^3/s (270 m^3/s) June 12, 1970, gage height, 8.01 ft (2.441 m); minimum daily, 210 ft^3/s (5.95 m^3/s) Aug. 25, 26, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,610 ft^3/s (131 m^3/s) May 20, gage height, 5.60 ft (1.707 m); minimum daily, 778 ft^3/s (22.0 m^3/s) Feb. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1790	2400	1860	1440	1770	1680	2620	2740	3600	2040	1730	1610
2	1780	2450	1630	1010	1710	1550	2650	2730	3530	2170	1770	1600
3	1810	2420	2040	1090	1750	1480	2640	2750	3540	2240	1810	1620
4	1770	2460	2330	1340	1520	1470	2650	2870	3500	2230	1860	1360
5	1760	2480	2260	1320	979	1460	2690	2980	3500	2210	1820	1280
6	1740	2500	2200	1390	778	1440	2530	2990	3600	2180	1770	1250
7	1700	2540	2160	1620	1120	1480	2540	3010	3580	2070	1710	1200
8	1850	2640	2120	1600	1380	1520	2660	3040	3400	2070	1680	1380
9	1880	2600	2100	1600	1460	1550	2850	3090	3250	1940	1680	1550
10	1870	2450	2060	1620	1520	1580	2960	3190	3220	1870	1610	1580
11	1860	2400	2040	1600	1560	1590	2880	3320	3110	1880	1570	1670
12	2050	2420	2020	1360	1530	1530	2860	3520	3000	1880	1580	1690
13	2430	2410	1990	1490	1550	1470	2830	3590	3090	1950	1560	1850
14	2770	2390	1910	1600	1550	1490	2850	3440	3130	1920	1510	1960
15	3000	2570	1690	1600	1580	1690	2800	3480	3070	1870	1520	1930
16	2710	2670	1390	1610	1620	1880	2740	3500	2950	1770	1450	1880
17	2500	2620	1370	1640	1620	1970	2730	3460	2930	1670	1270	1900
18	2510	2710	1610	1680	1590	2110	2720	3490	2510	1600	1230	1980
19	2510	2710	1610	1700	1500	2300	2750	3990	2010	1860	1320	1980
20	2510	2600	1610	1700	1670	2360	2760	4320	2160	1810	1350	1930
21	2600	2530	1620	1690	1650	2250	2740	4210	3200	1910	1370	1970
22	2430	2400	1610	1680	1610	2220	2730	4120	3700	1970	1400	1970
23	2790	2420	1600	1680	1590	2170	2830	4030	3710	2110	1450	1970
24	2750	2490	1600	1680	1590	2350	2840	3850	3290	2190	1510	1970
25	2730	2540	1610	1680	1630	2500	2810	3720	2710	2100	1560	1980
26	2620	2470	1600	1670	1670	2570	2880	3710	2510	2120	1610	1980
27	2600	2420	1630	1650	1680	2570	2850	3670	2440	2100	1800	1980
28	2590	2350	1630	1690	1710	2580	2860	3670	2090	2030	1810	1960
29	2590	2290	1610	1850	1720	2580	2820	3770	1900	1970	1750	1950
30	2550	2210	1600	1890	---	2590	2780	3780	1960	1790	1710	1980
31	2430	---	1610	1870	---	2600	---	3720	---	1720	1680	---
TOTAL	71480	74560	55720	49040	44607	60580	82850	107750	90250	61300	49450	52910
MEAN	2306	2485	1797	1582	1538	1954	2762	3476	3008	1977	1595	1764
MAX	3000	2710	2330	1890	1770	2600	2960	4320	3710	2240	1860	1980
MIN	1700	2210	1370	1010	778	1440	2530	2730	1900	1600	1230	1200
AC-FT	141800	147900	110500	97270	88480	120200	164300	213700	179000	121600	98080	104900

CAL YR 1975 TOTAL 783650 MEAN 2147 MAX 5040 MIN 1110 AC-FT 1554000
WTR YR 1976 TOTAL 800497 MEAN 2187 MAX 4320 MIN 778 AC-FT 1588000

06043500 GALLATIN RIVER NEAR GALLATIN GATEWAY, MT

LOCATION.--Lat 45°29'51", long 111°16'09", in SE¼SE¼SE¼ sec.7, T.4 S., R.4 E., Gallatin County, Hydrologic Unit 10020008, on left bank 0.3 mi (0.5 km) downstream from Spanish Creek, 7.3 mi (11.7 km) south of Gallatin Gateway, and at mile 42.5 (68.4 km).

DRAINAGE AREA.--825 mi^2 (2,137 km^2).

PERIOD OF RECORD.--August 1889 to September 1894, June 1930 to September 1969, annual maximum, water years 1970-71, October 1971 to current year. Monthly discharge only for some periods, published in WSP 1309. Published as West Gallatin River near Bozeman 1889-94.

REVISED RECORDS.--WSP 1389: 1892(M), 1893-94. WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,167.7 ft (1,575.11 m) above mean sea level. Prior to Oct. 20, 1932, nonrecording gages at several different sites and datums within 0.8 mi (1.3 km) of present site.

REMARKS.--Records good. Diversions for irrigation of about 1,400 acres (5.67 km^2) above station.

AVERAGE DISCHARGE.--49 years, 817 ft^3/s (23.14 m^3/s), 591,900 acre-ft/yr (730 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,690 ft^3/s (274 m^3/s) June 17, 1974, gage height, 7.38 ft (2.249 m); minimum, 117 ft^3/s (3.31 m^3/s) Jan. 19, 1935, gage height, 0.68 ft (0.207 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,900 ft^3/s (82.1 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 11	1045	3410	96.6	4.10	1.250	June 22	1830	*5870	166	*5.27	1.606
June 5	0200	5500	156	5.12	1.561	July 1	0245	3790	107	4.30	1.311

Minimum discharge, 281 ft^3/s (7.96 m^3/s) Mar. 2, gage height, 1.29 ft (0.393 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	561	586	445	372	383	376	416	650	4270	3590	1180	694
2	555	596	491	368	377	323	411	783	4450	3310	1200	684
3	547	610	500	394	397	354	383	930	4690	2980	1160	677
4	542	605	497	411	381	365	418	1390	5020	2860	1100	668
5	540	595	488	422	370	360	464	1360	4990	2810	1050	661
6	537	601	468	414	389	369	511	1330	4910	2760	1000	686
7	544	604	490	406	398	370	527	1460	5020	2660	971	831
8	603	550	502	394	410	376	594	1790	4890	2580	946	724
9	569	501	508	407	411	376	658	2150	4830	2450	936	691
10	576	548	512	402	388	379	628	2250	4710	2380	942	675
11	570	543	518	381	387	389	684	3110	4690	2260	911	677
12	581	490	495	391	360	348	779	2650	4310	2310	901	787
13	602	506	459	387	373	366	861	2620	4150	2170	886	729
14	608	524	387	381	378	370	783	3470	3490	1920	861	690
15	603	549	458	394	373	364	750	3480	3210	1790	846	680
16	591	571	458	402	372	369	692	3070	3760	1700	848	656
17	580	567	407	408	364	391	639	3330	3910	1630	822	656
18	592	543	405	405	368	429	616	4190	3970	1790	811	767
19	585	498	376	386	384	430	607	4470	3970	1770	832	794
20	587	421	349	357	370	385	588	4350	4660	1660	791	715
21	851	423	360	367	355	384	597	4440	5030	1530	778	679
22	923	467	361	380	360	388	605	4450	5300	1470	762	669
23	724	516	373	393	362	397	603	4540	4690	1360	789	738
24	612	533	409	395	372	384	577	4410	3960	1330	833	728
25	617	502	414	398	373	388	647	4290	3550	1330	775	700
26	648	484	418	383	377.	364	608	4050	3230	1250	756	676
27	612	470	423	385	387	383	589	4110	2970	1200	761	658
28	610	436	381	386	389	353	567	4620	2890	1160	738	643
29	589	408	399	392	381	364	574	4570	2990	1130	723	631
30	603	388	421	406	---	361	579	4440	3320	1140	708	615
31	609	---	415	396	---	394	---	4420	---	1150	697	---
TOTAL	18871	15633	13587	12163	10989	11649	17955	97173	125830	61460	27314	20881
MEAN	609	521	438	392	379	376	599	3135	4194	1982	881	696
MAX	923	610	518	422	411	430	861	4620	5300	3590	1200	831
MIN	537	388	349	357	355	323	383	650	2890	1130	697	615
AC-FT	37430	31010	26950	24130	21800	23110	35610	192700	249600	121900	54180	41420

CAL YR 1975 TOTAL 414244 MEAN 1135 MAX 7180 MIN 310 AC-FT 821700
WTR YR 1976 TOTAL 433495 MEAN 1184 MAX 5300 MIN 323 AC-FT 859800

06050000 HYALITE CREEK AT HYALITE RANGER STATION, NEAR BOZEMAN, MT

LOCATION.--Lat 45°33'42", long 111°04'12", in NW¼SE¼ sec.23, T.3 S., R.5 E., Gallatin County, Hydrologic Unit 10020008, Gallatin National Forest, on right bank 0.8 mi (1.3 km) south of Hyalite ranger station, 7.3 mi (11.7 km) south of Bozeman, and 20 mi (32 km) upstream from mouth.

DRAINAGE AREA.--48.2 mi^2 (124.8 km^2).

PERIOD OF RECORD.--August 1895 to October 1896, calendar year 1897 (discharge measurements only), April 1898 to October 1899, June to October 1900, May to September 1902, calendar year 1903 (discharge measurements only), September to December 1904, September 1934 to current year. Monthly discharge only for some periods, published in WSP 1309. Prior to 1934, published as Middle Creek near Bozeman.

REVISED RECORDS.--WSP 84: 1898-99. WSP 1509: 1902, 1939(M). WSP 1559: Drainage area. WSP 1709: 1953, 1956-57.

GAGE.--Water-stage recorder. Datum of gage is 5,539.6 ft (1,688.47 m) above mean sea level. Prior to September 1934, nonrecording gages at two sites 0.5 mi (0.8 km) upstream at different datums. Sept. 13, 1934, to May 13, 1948, water-stage recorder at site 0.3 mi (0.5 km) downstream at different datum.

REMARKS.--Records good except those for winter period, which are poor. Flow regulated by Middle Creek Reservoir (see p.578) since March 1951.

AVERAGE DISCHARGE.--44 years (1895-96, 1898-99, 1934-76), 67.2 ft^3/s (1.903 m^3/s), 18.93 in/yr (481 mm/yr), 48,700 acre-ft/yr (60.0 hm^3/yr), adjusted for storage in Middle Creek Reservoir.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 956 ft^3/s (27.1 m^3/s) June 14, 1898, gage height, 2.10 ft (0.640 m), site and datum then in use; maximum gage height, 4.01 ft (1.222 m) Dec. 15-18, 1940 (backwater from ice), site and datum then in use; minimum daily discharge, 5.0 ft^3/s (0.14 m^3/s) Jan. 27, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 420 ft^3/s (11.9 m^3/s) June 21, gage height, 2.92 ft (0.890 m); maximum gage height, 3.23 ft (0.985 m) Nov. 30 (backwater from ice); minimum daily discharge, 20 ft^3/s (0.57 m^3/s) Mar. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	49	24	22	25	23	29	56	236	255	140	67
2	60	51	24	22	25	20	28	65	221	246	138	64
3	60	58	24	22	25	21	28	78	230	201	133	64
4	59	59	25	23	23	21	30	97	241	172	125	64
5	59	59	29	23	21	21	33	94	255	180	123	66
6	57	58	37	22	22	22	37	107	259	194	120	63
7	56	58	27	21	24	23	42	120	229	220	119	63
8	58	55	26	22	25	23	49	150	210	234	119	61
9	56	51	27	23	25	24	52	174	224	224	119	61
10	58	50	27	23	24	24	54	183	234	184	113	60
11	58	49	27	23	25	23	61	200	223	186	111	57
12	58	50	26	22	26	22	65	164	213	197	108	60
13	59	47	25	23	26	23	67	184	197	199	110	58
14	59	47	24	24	27	24	59	200	191	193	106	57
15	56	47	25	25	26	23	45	201	175	194	106	57
16	54	43	25	24	25	23	40	190	228	151	104	56
17	55	42	24	23	25	24	40	212	231	135	103	58
18	56	42	25	23	25	25	50	290	214	140	98	61
19	55	42	25	23	25	25	49	288	241	153	94	59
20	55	42	25	23	25	25	48	303	275	152	91	58
21	61	41	25	25	24	24	47	318	315	163	89	58
22	62	40	25	26	25	24	49	335	221	161	88	57
23	57	41	25	24	25	24	50	331	168	148	86	58
24	55	43	25	23	25	23	49	304	171	143	86	56
25	55	42	25	23	25	23	52	313	150	146	81	56
26	56	41	26	28	26	23	52	324	157	144	77	55
27	54	40	26	27	26	25	48	340	156	144	73	55
28	54	35	25	25	25	29	48	335	152	142	74	54
29	54	30	24	25	25	28	47	313	146	141	72	53
30	52	23	23	25	---	28	49	293	173	141	70	55
31	50	---	22	25	---	29	---	271	---	138	69	---
TOTAL	1758	1375	792	732	720	739	1397	6833	6316	5421	3145	1771
MEAN	56.7	45.8	25.5	23.6	24.8	23.8	46.6	220	211	175	101	59.0
MAX	62	59	37	28	27	29	67	340	315	255	140	67
MIN	50	23	22	21	21	20	28	56	152	135	69	53
AC-FT	3490	2730	1570	1450	1430	1470	2770	13550	12530	10750	6240	3510
MEAN†	48.5	44.2	34.6	29.1	28.7	27.2	54.8	250	235	156	59.4	48.9
CFSM†	1.01	.92	.72	.60	.60	.56	1.14	5.19	4.88	3.25	1.23	1.01
IN†	1.16	1.02	.83	.70	.64	.65	1.27	5.97	5.43	3.74	1.42	1.13
AC-FT	2,980	2,630	2,130	1,790	1,650	1,670	3,260	15,350	13,970	9,620	3,650	2,910

OBSERVED

CAL YR 1975	TOTAL	33,156	MEAN	90.8	MAX	601	MIN	14	AC-FT	65,760
WTR YR 1976	TOTAL	30,999	MEAN	84.7	MAX	340	MIN	20	AC-FT	61,490

ADJUSTED

CAL YR 1975	TOTAL	33,254	MEAN	91.1	CFSM	1.89	IN	25.65	AC-FT	65,960
WTR YR 1976	TOTAL	31,061	MEAN	84.9	CFSM	1.76	IN	23.96	AC-FT	61,610

† Adjusted for change in contents in Middle Creek Reservoir.

06052500 GALLATIN RIVER AT LOGAN, MT

LOCATION. Lat 45°53'07", long 111°26'15", in NE¼ sec.35, T.2 N., R.2 E., Gallatin County, Hydrologic Unit 10020008, on right bank at former county road bridge site, 0.5 mi (0.8 km) west of Logan and 6 mi (10 km) upstream from mouth.

DRAINAGE AREA.--1,795 mi^2 (4,649 km^2).

PERIOD OF RECORD.--September 1893 to December 1905, August 1928 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1389: 1898-99, 1903, 1905, 1929(M), 1935-36(M), 1938-39(M), 1941(M). WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,086.42 ft (1,245.541 m) above mean sea level. Prior to Aug. 10, 1928, nonrecording gages at several sites within 0.5 mi (0.8 km) of present site at various datums. Aug. 10, 1928, to Oct. 7, 1941, nonrecording gage at present site and datum.

REMARKS.--Records good except those for January, which are fair. Some regulation by Middle Creek Reservoir (see p.578). Diversions for irrigation of about 110,000 acres (445 km^2) above station.

AVERAGE DISCHARGE.--60 years, 1,056 ft^3/s (29.91 m^3/s), 765,100 acre-ft/yr (943 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 9,840 ft^3/s (279 m^3/s) June 21, 1899, gage height, 6.25 ft (1.905 m), site and datum then in use; maximum gage height, 11.88 ft (3.621 m) Feb. 5, 1963, from floodmark (backwater from ice); minimum discharge observed, 130 ft^3/s (3.68 m^3/s) July 19, 1939, gage height, 2.04 ft (0.622 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,700 ft^3/s (76.5 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 19	1445	5690	161	7.44	2.268	June 23	1000	*6660	189	*7.93	2.417

Minimum discharge, 591 ft^3/s (16.7 m^3/s) Feb. 5, gage height, 3.47 ft (1.058 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	833	1380	981	870	962	944	1060	1550	4220	3790	815	762
2	821	1340	1140	860	951	787	1050	1630	4100	3780	888	742
3	803	1330	1300	880	952	859	1030	1780	4020	3380	898	720
4	788	1340	1290	920	876	957	1030	2220	4240	3130	910	715
5	781	1320	1270	958	736	975	1090	2810	4300	2990	879	705
6	778	1300	1150	950	766	1070	1190	2780	4150	2780	842	716
7	779	1290	1160	850	888	915	1300	2740	4230	2590	828	780
8	931	1260	1200	870	991	909	1380	2940	4100	2430	837	798
9	963	1200	1220	970	990	935	1500	3280	3870	2230	875	782
10	927	1160	1230	950	945	1030	1570	3550	3780	2080	857	783
11	936	1200	1280	1070	946	1250	1550	4110	3750	1880	849	781
12	973	1120	1200	990	1040	926	1640	4620	3770	1920	847	904
13	1120	1120	1180	960	1140	926	1760	4230	3860	2020	828	938
14	1310	1140	1010	1090	1060	926	1820	4490	4040	1710	847	897
15	1270	1180	970	1000	976	909	1700	5040	3620	1470	835	907
16	1200	1220	960	1020	950	935	1650	4740	3600	1300	847	905
17	1140	1270	940	1060	940	1190	1540	4470	4500	1180	814	902
18	1130	1220	940	1070	934	1430	1500	4900	4420	1240	801	991
19	1130	1150	920	1040	902	1380	1510	5400	4330	1500	827	1200
20	1110	1080	900	980	910	1090	1440	5360	4560	1420	802	1090
21	1200	1200	920	940	886	1020	1490	5350	5240	1290	783	1020
22	1710	1310	940	970	906	998	1440	5330	5540	1200	763	1000
23	1740	1150	940	980	913	1040	1630	5330	6330	1130	827	1030
24	1490	1110	952	940	933	1010	1660	5340	5500	1060	896	1080
25	1400	1110	951	920	975	1010	1810	5000	4790	1100	864	1100
26	1440	1050	960	990	1010	952	1710	4810	4320	1100	824	1090
27	1470	1070	995	997	1100	979	1700	4470	4010	1010	834	1060
28	1400	1070	935	1010	1060	952	1590	4640	3710	912	828	1040
29	1360	972	925	1010	976	944	1590	4750	3460	831	813	1010
30	1350	937	900	999	---	935	1540	4600	3540	825	793	992
31	1370	---	880	992	---	979	---	4460	---	809	774	---
TOTAL	35653	35579	32519	30106	27594	31162	44270	126720	127900	56087	25925	27440
MEAN	1150	1188	1049	971	952	1005	1476	4088	4263	1809	836	915
MAX	1740	1360	1300	1090	1140	1430	1820	5400	6330	3790	910	1200
MIN	778	937	880	850	736	787	1030	1550	3480	809	763	705
AC-FT	70720	70570	64500	59720	54730	61810	87810	251300	253700	111200	51420	54430

CAL YR 1975 TOTAL 624351 MEAN 1711 MAX 7370 MIN 600 AC-FT 1238000
WTR YR 1976 TOTAL 600955 MEAN 1642 MAX 6330 MIN 705 AC-FT 1192000

06054500 MISSOURI RIVER AT TOSTON, MT

LOCATION.--Lat 46°08'46", long 111°25'18", in SE¼NW¼ sec.36, T.5 N., R.2 E., Broadwater County, Hydrologic Unit 10030101, on left bank 2 mi (3 km) southeast of Toston, 4.8 mi (7.7 km) upstream from Crow Creek, 7.8 mi (12.6 km) downstream from Sixteenmile Creek, and at mile 2,296.1 (3,694.4 km) (revised).

DRAINAGE AREA.--14,669 mi^2 (37,993 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1890 to February 1891, April 1910 to December 1916, April 1941 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 3,905.68 ft (1,190.451 m) above mean sea level. Prior to Dec. 20, 1916, nonrecording gages at site 2.5 mi (4.0 km) downstream at different datums.

REMARKS.--Water-discharge records good. Some regulation by six reservoirs on tributaries (see p. 578) and Clark Canyon Reservoir (see p. 37). Diversions for irrigation of about 555,400 acres (2,250 km^2) of which 12,000 acres (48.6 km^2) lies below station.

AVERAGE DISCHARGE.--41 years, 5,401 ft^3/s (153.0 m^3/s), 3,913,000 acre-ft/yr (4.82 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,000 ft^3/s (906 m^3/s) June 6, 1948, gage height, 11.77 ft (3.587 m); minimum, 562 ft^3/s (15.9 m^3/s) Apr. 30, 1941, gage height, 1.68 ft (0.512 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 23,300 ft^3/s (660 m^3/s) May 21, gage height, 10.18 ft (3.103 m); minimum daily, 2,300 ft^3/s (65.1 m^3/s) Feb. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4390	7000	3960	3870	4750	4430	5780	8890	19000	9940	3930	4510
2	4410	7020	5340	3570	4670	3140	6030	9850	18000	9670	4050	4330
3	4260	7370	6650	3710	4510	2770	6090	10900	16700	9460	4140	4230
4	4230	7140	10500	3660	3440	3240	5980	11900	16000	8910	4220	4180
5	4260	7140	9000	4250	2380	3690	6080	13600	15600	8580	4270	3930
6	4300	7190	7600	4570	2300	4020	6370	14300	15200	8180	4140	3830
7	4270	7090	7000	4520	2330	4640	6500	14400	15000	7700	3990	3930
8	4560	7020	6600	3990	3470	4930	7040	14300	14900	7290	3890	3890
9	4930	6940	6400	4270	4320	4970	7590	15000	14500	6700	3920	3990
10	5050	6750	6240	4910	4400	5220	8380	15600	14100	6420	3930	4030
11	5160	6530	6380	4720	4380	5540	8560	16800	14100	6080	3870	4170
12	5300	6370	6260	4580	4610	4280	8910	18500	14000	6080	3860	4930
13	5820	6350	6020	4590	4810	4570	10100	19400	15200	6340	3760	5430
14	6780	6310	5650	4270	5150	4980	11400	19900	15900	6120	3700	5500
15	7340	6310	5310	4500	4720	4540	13600	20900	15700	5850	3640	5400
16	7800	6550	5450	5190	4670	4710	13800	21000	14400	5480	3580	5300
17	7240	6680	5220	5450	4580	5110	12700	21000	14800	5090	3480	5170
18	7060	6670	4880	5460	4510	6150	10500	21300	14400	4970	3340	5330
19	6880	6570	4530	5430	4430	6500	9660	22100	13400	5660	3420	6320
20	6810	6010	4400	5130	4420	6170	9390	23100	13400	6250	3540	6810
21	6800	6010	4540	4870	4390	5870	9160	23200	14400	6140	3540	6720
22	7530	5310	4650	4790	4370	5600	8900	23000	16300	6010	3540	6590
23	7900	5760	4500	4850	4330	5430	8920	22900	19000	5820	3720	6310
24	8140	6190	4450	4790	4350	5340	8840	22600	19200	5690	4270	6280
25	7950	6120	4970	4710	4400	5600	8680	22100	17300	5540	4670	6630
26	7630	5970	5320	4220	4480	5600	9360	21800	15100	5360	5110	6310
27	7520	5460	5460	4470	4590	5620	9900	20900	13300	5090	5090	6230
28	7290	5040	4890	4800	4640	5600	9280	20700	12000	4810	5180	6080
29	7120	4180	4990	4820	4570	5560	8510	20400	10600	4500	4980	5970
30	6990	3830	5050	5010	---	5520	8420	20200	10000	4260	4800	5860
31	7010	---	4730	4930	---	5560	---	20000	---	4020	4670	---
TOTAL	192730	188880	176940	142900	122970	154900	264430	570540	451500	198010	126240	158190
MEAN	6217	6296	5708	4610	4240	4997	8814	18400	15050	6387	4072	5273
MAX	8140	7370	10500	5460	5150	6500	13800	23200	19200	9940	5180	6810
MIN	4230	3830	3960	3570	2300	2770	5780	8890	10000	4020	3340	3830
AC-FT	382300	374600	351000	283400	243900	307200	524500	1132000	895600	392800	250400	313800

CAL YR 1975 TOTAL 2696380 MEAN 7387 MAX 24800 MIN 2400 AC-FT 5348000
WTR YR 1976 TOTAL 2748230 MEAN 7509 MAX 23200 MIN 2300 AC-FT 5451000

06054500 MISSOURI RIVER AT TOSTON, MT--Continued
(National Stream Quality Accounting Network)

WATER-QUALITY RECORDS

LOCATION.--Samples collected at old bridge on U.S. Highway 287, at Toston, 2.4 mi (3.9 km) downstream from gaging station.

PERIOD OF RECORD.--Water years 1949-53, 1972 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1973 to current year.
WATER TEMPERATURES: May 1949 to June 1953, October 1973 to current year.

REMARKS.--Some regulation by six reservoirs on tributaries and Clark Canyon Reservoir. Many diversions for irrigation upstream from station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 495 micromhos Jan. 7, 1974; minimum daily, 185 micromhos June 11, 1976.
WATER TEMPERATURES: Maximum daily, 25.5°C July 25, 1949, July 31, 1951, July 23, 1952; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 433 micromhos Feb. 9; minimum daily, 185 micromhos June 11.
WATER TEMPERATURES: Maximum daily, 22.0°C July 27; minimum daily, 0.0°C many days during November to March.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	FECAL COLIFORM (COL. PER 100 ML)	FECAL STREPTOCOCCI KF AGAR (COL. PER 100 ML)
OCT											
30...	1015	6990	380	8.5	16.5	5.5	5	12.4	114	25	20
NOV											
25...	1115	6110	400	8.3	1.0	.5	7	13.2	106	43	16
DEC											
22...	1000	4650	427	8.3	-5.0	.5	4	13.5	108	6	17
JAN											
14...	1015	4260	437	8.2	3.5	.0	3	13.1	103	48	16
FEB											
10...	1030	4160	446	8.2	3.5	1.0	4	13.0	106	31	15
MAR											
09...	1045	5030	408	8.4	9.5	2.0	3	12.9	108	6	4
APR											
12...	0940	8790	329	8.3	18.0	10.0	30	10.2	105	117	52
MAY											
13...	0945	19400	230	8.0	22.0	12.5	30	9.5	103	410	430
JUN											
23...	1010	18900	209	8.3	9.5	12.0	30	9.4	101	1100	570
JUL											
21...	1100	6160	349	8.6	22.0	20.0	6	9.2	116	65	47
AUG											
26...	1105	5160	420	8.5	17.0	17.5	7	9.2	111	84	110
SEP											
30...	1000	5860	385	8.6	17.0	14.0	6	9.6	108	18	15

DATE	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)
OCT											
30...	150	11	41	12	19	.7	3.7	161	5	.9	32
NOV											
25...	150	7	41	12	21	.7	3.7	177	0	1.4	38
DEC											
22...	180	16	47	14	21	.7	4.1	194	0	1.6	45
JAN											
14...	180	13	47	14	21	.7	4.1	197	0	2.0	51
FEB											
10...	170	10	46	13	22	.7	4.2	193	0	1.9	43
MAR											
09...	150	7	42	12	21	.7	3.6	180	0	1.1	46
APR											
12...	110	0	31	9.1	19	.8	3.9	141	--	1.1	32
MAY											
13...	91	6	24	7.5	12	.5	3.1	103	0	1.6	23
JUN											
23...	100	6	28	7.4	9.3	.4	2.4	115	0	.9	15
JUL											
21...	150	16	41	12	15	.5	3.7	161	2	.7	34
AUG											
26...	180	14	49	14	19	.6	4.4	196	3	1.0	54
SEP											
30...	160	16	42	13	19	.7	3.9	159	7	.7	54

06054500 MISSOURI RIVER AT TOSTON, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT											
30...	9.3	.7	20	229	.31	4320	.07	.45	.52	.03	--
NOV											
25...	11	1.0	24	241	.33	3980	.18	1.1	1.3	.02	--
DEC											
22...	10	1.0	23	248	.34	3110	.32	.31	.63	.02	2.6
JAN											
14...	11	.9	23	260	.35	2990	.31	.24	.55	.01	--
FEB											
10...	12	1.1	23	270	.37	3030	.30	.33	.63	.03	--
MAR											
09...	12	1.3	24	244	.33	3310	.22	.29	.51	.03	2.3
APR											
12...	11	1.1	24	205	.28	4870	.15	.98	1.1	.19	--
MAY											
13...	5.6	.6	18	161	.22	8430	.20	1.2	1.4	.20	--
JUN											
23...	4.2	.4	17	141	.19	7200	.17	.40	.57	.14	7.6
JUL											
21...	6.6	.5	17	210	.29	3490	.11	.22	.33	.06	--
AUG											
26...	10	.7	21	248	.34	3460	.11	.30	.41	.05	--
SEP											
30...	10	.8	19	245	.33	3880	.02	.27	.29	.02	2.6

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
DEC												
22...	1000	22	18	<10	0	--	0	<50	0	20	--	180
MAR												
09...	1045	32	32	10	0	10	0	<50	0	10	1	260
JUN												
23...	1010	12	8	2	0	10	<10	2	0	20	0	3000
SEP												
30...	1000	40	20	<10	0	0	0	<50	0	10	7	260

DATE	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
DEC											
22...	10	<100	3	30	10	.0	.0	0	0	20	0
MAR											
09...	0	<100	3	30	0	.0	.0	0	0	50	0
JUN											
23...	130	14	1	130	1	<.5	<.5	0	0	20	3
SEP											
30...	70	<100	0	30	10	.0	.0	0	0	20	10

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TOTAL ATRA-ZINE (UG/L)	ATRA-ZINE IN BOTTOM MATERI-AL (UG/KG DRY SOLIDS)	TOTAL ALDRIN (UG/L)	ALDRIN IN BOTTOM MA-TERIAL (UG/KG)	TOTAL CHLOR-DANE (UG/L)	CHLOR-DANE IN BOTTOM MA-TERIAL (UG/KG)	TOTAL DDD (UG/L)	DDD IN BOTTOM MA-TERIAL (UG/KG)	TOTAL DDE (UG/L)	DDE IN BOTTOM MA-TERIAL (UG/KG)	TOTAL DDT (UG/L)
NOV												
25...	1115	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB												
10...	1030	ND	--	ND	--	ND	--	ND	--	ND	--	ND
MAY												
13...	0945	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG												
26...	1105	ND	--	ND	--	ND	--	ND	--	ND	--	ND

06054500 MISSOURI RIVER AT TOSTON, MT--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DDT IN BOTTOM MATERIAL (UG/KG)	TOTAL DIAZINON (UG/L)	DIAZINON IN BOTTOM MATERIAL (UG/KG)	TOTAL DIELDRIN (UG/L)	DIELDRIN IN BOTTOM MATERIAL (UG/KG)	TOTAL ENDRIN (UG/L)	ENDRIN IN BOTTOM MATERIAL (UG/KG)	TOTAL ETHION (UG/L)	ETHION IN BOTTOM MATERIAL (UG/KG)	TOTAL HEPTACHLOR (UG/L)	HEPTACHLOR IN BOTTOM MATERIAL (UG/KG)	TOTAL HEPTACHLOR EPOXIDE (UG/L)
NOV												
25...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB												
10...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND
MAY												
13...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG												
26...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	HEPTACHLOR EPOXIDE IN BOTTOM MATERIAL (UG/KG)	TOTAL LINDANE (UG/L)	LINDANE IN BOTTOM MATERIAL (UG/KG)	TOTAL MALATHION (UG/L)	MALATHION IN BOTTOM MATERIAL (UG/KG)	TOTAL METHOXYCHLOR (UG/L)	METHOXYCHLOR IN BOTTOM MATERIAL (UG/KG)	TOTAL METHYL PARATHION (UG/L)	METHYL PARATHION IN BOTTOM MATERIAL (UG/KG)	TOTAL METHYL TRITHION (UG/L)	METHYL TRITHION IN BOTTOM MATERIAL (UG/KG)	TOTAL PARATHION (UG/L)
NOV												
25...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB												
10...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND
MAY												
13...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG												
26...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	PARATHION IN BOTTOM MATERIAL (UG/KG)	TOTAL TOXAPHENE (UG/L)	TOXAPHENE IN BOTTOM MATERIAL (UG/KG)	TOTAL TRITHION (UG/L)	TRITHION IN BOTTOM MATERIAL (UG/KG)	SIMAZINE IN BOTTOM MATERIAL (UG/KG DRY SOLIDS)	TOTAL 2,4-D (UG/L)	2,4-D IN BOTTOM MATERIAL (UG/KG)	TOTAL 2,4,5-T (UG/L)	2,4,5-T IN BOTTOM MATERIAL (UG/KG)	TOTAL SILVEX (UG/L)
NOV											
25...	ND	ND	ND	ND	ND	--	ND	--	ND	--	ND
FEB											
10...	--	ND	--	ND	--	--	ND	--	ND	--	ND
MAY											
13...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG											
26...	--	ND	--	ND	--	--	ND	--	ND	--	ND

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .062 MM
OCT						
30...	1015	5.5	6990	12	226	93
NOV						
25...	1115	.5	6110	54	891	45
DEC						
22...	1000	.5	4650	39	490	25
JAN						
14...	1015	.0	4260	89	1020	11
FEB						
10...	1030	1.0	4160	95	1070	11
MAR						
09...	1045	2.0	5030	66	896	12
APR						
12...	0940	10.0	8790	162	3840	67
MAY						
13...	0945	12.5	19400	290	15200	58
JUN						
23...	1010	12.0	18900	226	11500	63
JUL						
21...	1100	20.0	6160	17	283	88
AUG						
26...	1105	17.5	5160	18	251	90
SEP						
30...	1000	14.0	5860	12	190	83

06054500 MISSOURI RIVER AT TOSTON, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	405	371	398	390	388	386	378	349	192	257	335	382
2	408	370	393	404	381	412	376	320	199	255	338	378
3	404	369	410	407	381	409	371	298	198	249	343	385
4	402	369	404	418	381	412	367	280	210	249	339	388
5	401	365	376	421	414	415	368	279	201	253	337	391
6	403	361	380	411	417	417	370	257	189	260	345	392
7	406	362	382	410	417	419	362	258	206	264	342	391
8	402	361	381	415	421	400	354	250	191	268	342	398
9	402	364	381	415	433	390	340	248	193	268	343	393
10	409	360	378	401	419	382	327	241	188	275	348	382
11	411	369	376	400	413	375	314	245	185	275	350	378
12	409	370	370	405	408	389	312	247	189	283	356	362
13	401	375	370	403	401	394	300	224	190	283	355	389
14	389	377	370	401	395	386	280	228	204	290	358	403
15	390	378	377	402	395	388	264	221	209	290	361	401
16	402	380	386	399	391	389	249	219	218	295	367	386
17	409	375	386	379	397	387	248	212	221	301	369	379
18	406	368	398	379	401	373	268	218	230	308	372	381
19	399	361	413	374	400	351	289	211	235	309	378	370
20	392	361	407	380	400	356	297	210	237	313	372	389
21	387	380	412	387	397	359	299	210	231	333	375	408
22	382	400	412	390	398	363	302	203	229	324	376	388
23	371	398	415	391	397	371	305	206	230	328	377	372
24	365	390	417	388	403	369	313	204	245	322	370	373
25	360	381	417	390	402	372	320	203	251	320	388	373
26	360	382	415	390	396	374	314	202	249	326	400	372
27	367	380	398	390	392	372	298	201	256	330	383	368
28	371	388	397	393	389	373	300	198	258	330	381	363
29	371	396	400	385	390	373	322	194	261	331	372	365
30	370	396	400	378	---	375	338	190	263	331	372	363
31	371	---	403	379	---	377	---	190	---	331	376	---
MONTH	391	375	394	396	401	384	318	233	219	295	362	382

YEAR MAX 433 MIN 185 MEAN 346

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.0	5.5	0.5	0.0	1.0	1.0	7.0	10.0	13.0	17.5	21.0	17.5
2	11.5	6.0	1.0	0.0	0.5	0.0	5.0	10.5	13.0	17.0	20.0	18.0
3	12.0	7.0	1.5	0.0	0.0	0.0	6.0	11.5	14.0	17.0	18.5	16.5
4	12.5	7.0	1.0	0.0	0.0	0.0	7.0	12.5	14.0	17.5	18.0	17.0
5	12.0	6.5	0.5	0.0	0.0	0.0	8.0	10.0	14.5	18.0	18.0	17.5
6	12.0	6.5	1.0	0.0	0.0	0.0	9.0	10.5	15.0	20.0	19.5	17.5
7	12.0	6.5	1.5	0.0	0.0	0.0	9.5	9.5	15.5	20.0	20.5	14.0
8	10.0	5.0	2.5	0.0	0.0	0.0	10.0	12.0	14.5	19.0	20.0	12.5
9	8.5	3.0	4.0	0.0	1.0	1.0	10.5	13.5	16.0	19.5	18.0	13.0
10	9.5	3.0	5.0	0.0	0.5	1.0	8.0	14.0	16.0	19.5	17.5	13.0
11	9.5	2.5	3.5	0.0	1.0	0.5	9.0	13.0	16.0	21.5	17.0	14.0
12	9.0	1.5	2.5	0.0	1.0	0.0	8.5	11.0	14.5	20.5	18.5	13.5
13	7.0	1.5	0.5	0.0	1.0	1.0	10.0	12.0	12.5	17.0	19.5	13.0
14	6.5	3.5	0.0	0.0	2.0	0.5	8.5	13.5	10.0	18.5	19.0	14.0
15	7.0	4.5	0.0	1.0	1.5	1.0	7.5	10.5	11.0	19.0	19.0	14.0
16	6.0	5.0	0.0	1.0	1.0	3.0	6.0	11.0	12.5	20.0	16.0	15.0
17	7.5	3.5	0.0	1.0	1.0	5.5	5.0	12.5	11.5	21.0	15.0	16.0
18	9.0	2.5	0.0	1.5	0.5	6.0	5.0	13.0	11.0	20.0	17.0	16.0
19	9.0	2.0	0.0	0.5	0.0	6.0	7.0	13.0	14.0	19.0	17.5	12.0
20	9.5	1.0	0.0	1.0	0.0	3.0	7.5	13.0	16.0	17.5	18.0	13.0
21	8.5	0.0	0.0	0.0	0.5	2.5	6.5	13.0	14.5	18.5	16.5	13.0
22	7.5	0.0	0.0	0.0	0.5	3.5	8.0	13.5	15.0	19.0	18.0	14.0
23	6.5	0.5	0.0	1.0	1.0	4.0	7.5	14.0	12.5	19.5	19.0	13.5
24	5.0	1.0	0.5	1.0	1.5	3.5	8.0	13.0	11.0	20.5	16.5	14.0
25	4.0	0.0	0.5	1.0	2.5	4.0	9.5	13.5	12.5	19.0	18.0	14.0
26	5.0	0.5	1.0	1.0	2.5	3.0	5.5	12.0	11.5	21.0	17.5	13.0
27	3.5	0.0	0.5	1.5	3.0	4.0	5.5	13.5	13.5	22.0	15.0	11.5
28	4.0	0.0	0.0	0.0	3.0	4.0	4.5	14.0	15.0	21.0	16.0	12.5
29	3.5	0.0	0.5	0.5	2.0	4.0	5.0	13.0	16.5	20.0	16.5	12.5
30	5.0	0.0	0.5	1.0	---	4.5	7.5	14.0	18.0	19.5	17.0	13.0
31	5.5	---	0.0	1.0	---	6.0	---	14.0	---	20.0	18.0	---
MONTH	8.0	3.0	1.0	0.5	1.0	2.5	7.5	12.5	14.0	19.5	18.0	14.5

YEAR MAX 22.0 MIN 0.0 MEAN 8.5

06054500 MISSOURI RIVER AT TOSTON, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON

Date	Length of exposure (days)	Biomass (g/m^2) Dry weight	Biomass (g/m^2) Ash weight	Chloro-phyll a (mg/m^2)	Chloro-phyll b (mg/m^2)	Biomass pigment ratio	Chromospectmetric Chloro-phyll a (ug/l)	Chromospectmetric Chloro-phyll b (ug/l)	Biomass chloro-phyll ratio	Sampling method
Nov 25	26	.100	.000	.800	.300	100	--	--	--	Polyethylene strip
Dec 22	27	1.50	.800	.200	.000	2500	--	--	--	
Aug 26	36	5.77	1.62	26.7	1.65	160	--	--	--	
Sep 30	35	--	--	--	--	--	.7	.1	412	

PHYTOPLANTON

OCT. 30, 1975
1015 HOURS

2,300 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		30	1	
		TOTALS	30	1	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		240	10	
	....MELOSIRA		45	2	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		150	6	
	....COCCONEIS		180	8	
	....RHOICOSPHENIA		120	5	
	...CYMBELLACEAE				
	....CYMBELLA		90	4	
	....EPITHEMIA		45	2	
	...DIATOMACEAE				
	....DIATOMA		90	4	
	...FRAGILARIACEAE				
	....ASTERIONELLA		90	4	
	....FRAGILARIA		15	1	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		75	3	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		520	23	
	....PINNULARIA		30	1	
	...NITZSCHIACEAE				
D	....NITZSCHIA		430	19	
	...SURIRELLACEAE				
	....SURIRELLA		15	1	
	...TABELLARIACEAE				
L	....TABELLARIA			0	
		TOTALS	2,100	93	3.284=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
	..CHRYSOMONADALES				
	...OCHROMONADACEAE				
	....DINOBRYON		15	1	
		TOTALS	15	1	0.000=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..CHROOCOCCALES	COCCOID			
	...CHROOCOCCACEAE				
	....ANACYSTIS		45	2	
	..OSCILLATORIALES	FILAMENTOUS			
	...NOSTOCACEAE				
	....APHANIZOMENON		75	3	
		TOTALS	120	5	0.954=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:

PHYL/DIV	0.394
CLASS	0.450
ORDER	1.024
FAMILY	3.012
GENERA	3.548

06054500 MISSOURI RIVER AT TOSTON, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

NOV. 25, 1975
1115 HOURS

4,200 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		1,400	33	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		320	8	
L	....RHOICOSPHENIA			0	
	...CYMBELLACEAE				
L	....AMPHORA			0	
	....CYMBELLA		210	5	
	....EPITHEMIA		110	3	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		640	15	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		950	23	
	...NITZSCHIACEAE				
	....NITZSCHIA		530	13	
	...SURIRELLACEAE				
	....SURIRELLA		110	3	
		TOTALS	4,200	103	2.559=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
L	....OSCILLATORIA			0	

ORDER 0.910
FAMILY 2.490
GENERA 2.559

DEC. 22, 1975
1000 HOURS

1,900 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		760	40	
	..PENNALES	PENNATE			
	...CYMBELLACEAE				
	....CYMBELLA		130	7	
	....EPITHEMIA		63	3	
	...DIATOMACEAE				
	....DIATOMA		63	3	
	...FRAGILARIACEAE				
L	....FRAGILARIA			0	
L	....SYNEDRA			0	
	...GOMPHONEMATACEAE				
L	....GOMPHONEIS			0	
	....GOMPHONEMA		250	13	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		630	33	
	...NITZSCHIACEAE				
L	....DENTICULA			0	
		TOTALS	1,900	99	2.032=DIVERSITY

ORDER 0.971
FAMILY 1.940
GENERA 2.032

06054500 MISSOURI RIVER AT TOSTON, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
JAN. 14, 1976
1015 HOURS
1,100 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		440	40	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		100	9	
	....RHOICOSPHENIA		14	1	
	...CYMBELLACEAE				
	....CYMBELLA		43	4	
L	....EPITHEMIA			0	
	...DIATOMACEAE				
	....DIATOMA		28	3	
	...FRAGILARIACEAE				
	....ASTERIONELLA		14	1	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		130	12	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		230	21	
	....NEIDIUM		14	1	
	...NITZSCHIACEAE				
	....NITZSCHIA		100	9	
	...SURIRELLACEAE				
L	....SURIRELLA			0	
		TOTALS	1,100	101	2.540=DIVERSITY

ORDER 0.969
FAMILY 2.414
GENERA 2.540

FEB. 10, 1976
1030 HOURS
3,300 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		1,200	37	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		120	4	
L	....COCCONEIS			0	
L	....RHOICOSPHENIA			0	
	...CYMBELLACEAE				
L	....CYMBELLA			0	
	....EPITHEMIA		82	2	
	...DIATOMACEAE				
L	....DIATOMA			0	
	...FRAGILARIACEAE				
D	....FRAGILARIA		900	27	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		370	11	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		330	10	
	...NITZSCHIACEAE				
L	....NITZSCHIA			0	
	...SURIRELLACEAE				
L	....SURIRELLA			0	
		TOTALS	3,000	91	2.093=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..CHROOCOCCALES	COCCOID			
	...CHROOCOCCACEAE				
	....ANACYSTIS		82	2	
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
	....OSCILLATORIA		210	5	
		TOTALS	290	8	0.863=DIVERSITY

PHYL/DIV 0.424
CLASS 0.424
ORDER 1.389
FAMILY 2.411
GENERA 2.411

06054500 MISSOURI RIVER AT TOSTON, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAR. 9, 1976
1045 HOURS
1,200 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		240	20	
L	....MELOSIRA			0	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		59	5	
	....COCCONEIS		29	2	
L	....RHOICOSPHENIA			0	
	...CYMBELLACEAE				
	....CYMBELLA		29	2	
	...DIATOMACEAE				
	....DIATOMA		59	5	
	...FRAGILARIACEAE				
	....FRAGILARIA		29	2	
L	....SYNEDRA			0	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		210	17	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		320	27	
	...NITZSCHIACEAE				
D	....NITZSCHIA		210	17	
	...SURIRELLACEAE				
L	....SURIRELLA			0	
		TOTALS	1,200	97	2.688=DIVERSITY

ORDER 0.722
FAMILY 2.619
GENERA 2.688

APR. 12, 1976
0940 HOURS
11,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		100	1	
		TOTALS	100	1	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...FRAGILARIACEAE				
	....H.ARCUS		100	1	
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		2,100	20	
L	....STEPHANODISCUS			0	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		310	3	
	....COCCONEIS		100	1	
	....RHOICOSPHENIA		310	3	
	...CYMBELLACEAE				
	....AMPHORA		100	1	
	....CYMBELLA		310	3	
	....EPITHEMIA		200	2	
	...DIATOMACEAE				
	....DIATOMA		200	2	
	...EUNOTIACEAE				
L	....EUNOTIA			0	
	...FRAGILARIACEAE				
L	....ASTERIONELLA			0	
D	....FRAGILARIA		3,300	30	
	....SYNEDRA		200	2	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		820	8	
	...NAVICULACEAE	NAVICULOID			
L	....CALONEIS			0	
L	....GYROSIGMA			0	
D	....NAVICULA		1,900	18	
	...NITZSCHIACEAE				
	....DENTICULA		100	1	
	....HANTZSCHIA		200	2	
	....NITZSCHIA		410	4	
		TOTALS	11,000	101	3.026=DIVERSITY

PHYL/DIV 0.077
CLASS 0.077
ORDER 0.866
FAMILY 2.702
GENERA 3.075

06054500 MISSOURI RIVER AT TOSTON, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

MAY 13, 1976
0945 HOURS

7,400 CELLS/ML

ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
CHLOROPHYTA	GREEN ALGAE			
.CHLOROPHYCEAE				
..VOLVOCALES				
...PHACOTACEAE				
....PTEROMONAS		300	4	
	TOTALS	300	4	0.000=DIVERSITY
CHRYSOPHYTA				
.BACILLARIOPHYCEAE	DIATOMS			
..CENTRALES	CENTRIC			
...COSCINODISCACEAE				
....CYCLOTELLA		600	8	
..PENNALES	PENNATE			
...ACHNANTHACEAE				
....ACHNANTHES		450	6	
...FRAGILARIACEAE				
....FRAGILARIA		150	2	
...GOMPHONEMATACEAE				
....GOMPHONEMA		600	8	
...NAVICULACEAE	NAVICULOID			
....GYROSIGMA		150	2	
D ....NAVICULA		3,300	45	
...NITZSCHIACEAE				
D ....NITZSCHIA		1,700	22	
...SPIRELLACEAE				
....SURIRELLA		150	2	
	TOTALS	7,100	95	2.216=DIVERSITY

PHYL/DIV 0.246
CLASS 0.246
ORDER 0.649
FAMILY 2.250
GENERA 2.372

JUNE 23, 1976
1010 HOURS

3,200 CELLS/ML

ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
CHRYSOPHYTA				
.BACILLARIOPHYCEAE	DIATOMS			
..CENTRALES	CENTRIC			
...COSCINODISCACEAE				
....CYCLOTELLA		280	9	
..PENNALES	PENNATE			
...ACHNANTHACEAE				
....COCCONEIS		140	4	
...CYMBELLACEAE				
....CYMBELLA		140	4	
...DIATOMACEAE				
....DIATOMA		140	4	
...NAVICULACEAE	NAVICULOID			
....NAVICULA		420	13	
...NITZSCHIACEAE				
O ....NITZSCHIA		2,100	65	
	TOTALS	3,200	99	1.682=DIVERSITY

ORDER 0.426
FAMILY 1.682
GENERA 1.682

06054500 MISSOURI RIVER AT TOSTON, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

JULY 21, 1976
1100 HOURS
2,600 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		82	3	
		TOTALS	82	3	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		160	6	
	...CYMBELLACEAE				
	....CYMBELLA		250	9	
	...DIATOMACEAE				
	....DIATOMA		160	6	
	...FRAGILARIACEAE				
	....SYNEDRA		160	6	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		160	6	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		900	34	
	...NITZSCHIACEAE				
O	....NITZSCHIA		740	28	
		TOTALS	2,500	95	2.395=DIVERSITY

PHYL/DIV 0.201
CLASS 0.201
ORDER 0.201
FAMILY 2.521
GENERA 2.521

AUG. 26, 1976
1105 HOURS
4,400 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		220	5	
		TOTALS	220	5	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		430	10	
	....MELOSIRA		110	2	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		540	12	
	...CYMBELLACEAE				
	....CYMBELLA		330	7	
	....EPITHEMIA		220	5	
	...DIATOMACEAE				
	....DIATOMA		110	2	
	...FRAGILARIACEAE				
	....SYNEDRA		220	5	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		650	15	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		1,300	29	
	...NITZSCHIACEAE				
	....NITZSCHIA		330	7	
		TOTALS	4,200	94	2.935=DIVERSITY

PHYL/DIV 0.281
CLASS 0.281
ORDER 0.807
FAMILY 2.867
GENERA 3.073

06054500 MISSOURI RIVER AT TOSTON, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

SEP. 30, 1976
1000 HOURS

1,300 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		24	2	
	..ZYGNEMATALES				
	...DESMIDIACEAE	PLACODERM DESMIDS			
	....COSMARIUM		24	2	
		TOTALS	49	4	1.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		49	4	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		120	9	
	....RHOICOSPHENIA		98	8	
	...CYMBELLACEAE				
	....AMPHORA		24	2	
	....CYMBELLA		73	6	
	....EPITHEMIA		98	8	
	...DIATOMACEAE				
	....DIATOMA		73	6	
	...FRAGILARIACEAE				
	....SYNEDRA		49	4	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		120	9	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		440	34	
	...NITZSCHIACEAE				
	....DENTICULA		24	2	
	....NITZSCHIA		73	6	
	...SURIRELLACEAE				
L	....CYMATOPLEURA			0	
		TOTALS	1,200	98	3.074=DIVERSITY

PHYL/DIV 0.232
CLASS 0.232
ORDER 0.499
FAMILY 2.785
GENERA 3.227

06058500 CANYON FERRY RESERVOIR NEAR HELENA, MT

LOCATION.--Lat 46°38'57", long 111°43'39", in SE¼SE¼ sec.4, T.10 N., R.1 W., Lewis and Clark County, Hydrologic Unit 10030101, in block 17 of Canyon Ferry Dam, 15 mi (24 km) east of Helena, and at mile 2,252.8 (3,624.8 km) (revised).

DRAINAGE AREA.--15,904 mi^2 (41,191 km^2).

PERIOD OF RECORD.--April 1953 to current year (monthend contents only). Records of monthend contents in Lake Sewell, submerged by present reservoir Apr. 8, 1953, available January 1936 to March 1953. Scattered daily elevations and contents for April to July 1953, published in WSP 1320-B. Daily elevations and contents for May to June 1964, published in WSP 1840-B. Daily elevations and contents on file in Helena district office.

REVISED RECORDS.--WSP 1559: Drainage area.

CORRECTIONS.--In WSP 1729, the monthly contents in acre-ft for February 1955 is listed in error; it should be 1,224,000.

GAGE.--Water-stage recorder in powerhouse control room. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

REMARKS.--Reservoir is formed by concrete dam; construction began in 1949, completed in 1953. Storage began in March 1953. Usable capacity, 2,043,000 acre-ft (2.52 km^3) between elevation 3,650.00 ft (1,112.520 m), invert of outlet works, and 3,800.00 ft (1,158.240 m), controlled spillway elevation. Dead storage, 8,000 acre-ft (9.86 hm^3) below elevation 3,650.00 ft (1,112.520 m). Minimum operating level, 426,500 acre-ft (526 hm^3) at elevation 3,728.00 ft (1,136.294 m) for on-site power generation. Figures given herein represent usable contents. Water is used for power production, flood control, irrigation, recreation, and supplemental water supply for city of Helena.

COOPERATION.--Elevations and capacity table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 2,043,000 acre-ft (2.52 km^3) July 15-29, 31, 1955, July 2, 5, 6, 8, 1956, July 16, 17, 1962, June 23, 1964 (elevation, 3,800.00 ft or 1,158.240 m); minimum since first filling, 1,017,000 acre-ft (1.25 km^3) Apr. 11, 1967 (elevation, 3,764.70 ft or 1,147.481 m).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents at 2400, 1,982,000 acre-ft (2.44 km^3) June 26 (elevation, 3,798.25 ft or 1,157.707 m); minimum, 1,432,000 acre-ft (1.77 km^3) May 3, 4 (elevation, 3,781.05 ft or 1,152.464 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	3,796.11	1,908,000	-
Oct. 31	3,797.50	1,956,000	+48,000
Nov. 30	3,795.77	1,897,000	-59,000
Dec. 31	3,794.00	1,837,000	-60,000
CAL YR 1975			+150,000
Jan. 31	3,792.07	1,773,000	-64,000
Feb. 29	3,789.60	1,693,000	-80,000
Mar. 31	3,785.08	1,552,000	-141,000
Apr. 30	3,781.62	1,449,000	-103,000
May 31	3,791.29	1,747,000	+298,000
June 30	3,797.56	1,958,000	+211,000
July 31	3,796.61	1,925,000	-33,000
Aug. 31	3,793.32	1,814,000	-111,000
Sept. 30	3,792.97	1,803,000	-11,000
WTR YR 1976			-105,000

06058502 MISSOURI RIVER BELOW CANYON FERRY DAM, NEAR HELENA, MT

LOCATION.--Lat 46°38'58", long 111°43'39", in NW¼SE¼SE¼ sec.4, T.10 N., R.1 W., Lewis and Clark County, Hydrologic Unit 10030101, just downstream from generator outlet at Canyon Ferry Dam, 15 mi (24 km) east of Helena, and at mile 2,242.8 (3,608.7 km).

DRAINAGE AREA.--15,904 mi² (41,191 km²).

PERIOD OF RECORD.--Water years 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to current year.
WATER TEMPERATURES: October 1967 to current year.

REMARKS.--Flow completely regulated. Many diversions for irrigation upstream from station.

COOPERATION.--Records of discharge furnished by Canyon Ferry Project Office, Bureau of Reclamation, Helena, Mt.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 439 micromhos June 2, 10, 1973; minimum daily, 241 micromhos Dec. 16, 1968.
WATER TEMPERATURES: Maximum daily, 20.0°C Aug. 27, 1969; minimum daily, 0.0°C on several days during winter periods most years.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 388 micromhos May 4, 7; minimum daily, 242 micromhos Aug. 8, 15.
WATER TEMPERATURES: Maximum daily, 17.5°C Sept. 24; minimum daily, 3.5°C on many days during December to March.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE (DEG C)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
OCT												
29...	1400	8000	318	12.0	140	14	39	10	14	.5	3.3	152
NOV												
24...	1345	7500	334	8.0	140	10	37	11	15	.6	3.5	156
DEC												
15...	0935	7500	348	4.5	100	0	23	11	15	.6	3.4	150
JAN												
13...	0945	6000	351	4.0	160	18	44	11	16	.6	3.7	167
FEB												
09...	1440	6000	372	4.0	140	4	39	11	17	.6	3.8	169
MAR												
08...	1350	6500	375	4.0	150	7	40	12	18	.6	3.5	173
APR												
12...	1500	9280	387	5.5	160	12	41	13	18	.6	3.6	176
MAY												
13...	1335	14000	394	8.5	150	9	39	13	20	.7	3.8	173
JUN												
23...	1455	12000	299	14.0	110	7	30	8.9	16	.7	3.3	128
JUL												
21...	0855	5950	258	15.0	100	4	29	7.7	12	.5	2.8	122
AUG												
26...	0900	5690	254	16.0	110	11	30	7.8	11	.5	2.6	117
SEP												
30...	0830	5440	308	16.5	130	15	34	11	14	.5	3.2	140

DATE	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT												
29...	31	6.4	.5	15	195	.27	4210	.11	.03	.02	0	0
NOV												
24...	35	7.4	.6	18	205	.28	4150	.19	.03	.02	0	0
DEC												
15...	32	7.0	.7	17	184	.25	3730	.20	.02	.04	40	10
JAN												
13...	35	7.5	.6	18	219	.30	3550	.21	.01	.02	20	0
FEB												
09...	39	8.6	.7	18	221	.30	3580	.19	.02	.01	0	20
MAR												
08...	45	8.3	.8	21	235	.32	4120	.17	.01	.03	20	10
APR												
12...	45	9.8	.8	21	240	.33	6010	.15	.01	.00	20	0
MAY												
13...	51	11	1.0	20	245	.33	9260	.10	.00	.01	10	10
JUN												
23...	30	8.0	.7	20	181	.25	5860	.10	.02	.03	80	10
JUL												
21...	23	6.2	.7	18	161	.22	2590	.18	.04	.03	60	0
AUG												
26...	26	5.6	.5	17	159	.22	2440	.21	.06	.05	40	10
SEP												
30...	27	6.6	.6	18	184	.25	2700	.18	.06	.06	10	40

06058502 MISSOURI RIVER BELOW CANYON FERRY DAM, NEAR HELENA, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	300	322	328	334	343	366	373	387	335	260	251	251
2	303	320	328	334	338	363	376	386	330	262	247	258
3	300	320	322	332	343	360	376	387	327	255	247	273
4	307	320	323	331	340	360	378	388	324	257	245	267
5	309	320	321	333	346	360	378	388	321	251	246	258
6	303	324	322	331	346	363	378	388	311	255	245	262
7	306	327	323	334	348	366	379	388	316	252	249	275
8	307	324	322	332	345	361	379	386	312	253	242	274
9	307	323	328	331	345	356	378	385	312	259	247	272
10	306	323	327	332	349	360	376	382	307	261	248	269
11	306	329	327	331	347	356	370	382	304	250	250	269
12	305	328	329	334	352	362	370	383	314	260	250	268
13	306	329	330	337	354	359	380	378	305	260	244	269
14	306	326	331	335	351	362	379	375	310	258	243	269
15	306	328	330	332	351	359	379	373	299	254	242	269
16	305	326	330	332	348	360	386	370	291	252	245	273
17	306	328	328	336	345	365	384	361	300	257	246	271
18	305	329	327	334	349	368	384	369	290	255	248	272
19	307	331	329	336	352	368	382	366	288	251	246	283
20	311	329	332	336	352	368	383	362	283	259	249	279
21	312	328	330	336	350	370	382	361	290	253	245	280
22	316	328	330	334	350	370	381	355	287	250	249	277
23	323	329	330	339	353	370	381	356	286	249	248	282
24	323	329	331	338	353	369	381	350	281	249	249	278
25	313	331	331	339	353	373	381	357	288	252	249	287
26	312	331	331	339	359	369	381	352	273	250	248	299
27	313	330	334	340	357	377	381	349	269	252	249	293
28	313	330	337	339	353	375	381	349	264	248	249	288
29	312	331	336	339	357	373	380	342	259	251	250	288
30	312	332	339	340	---	377	380	335	260	254	251	295
31	316	---	339	342	---	376	---	339	---	248	251	---
MONTH	309	327	329	335	349	366	379	369	298	254	247	275

YEAR MAX 388 MIN 242 MEAN 320

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.0	11.5	6.0	3.5	3.5	4.0	4.0	6.0	10.5	15.0	15.0	17.0
2	16.0	11.5	6.0	3.5	4.0	4.0	4.0	5.5	12.0	15.0	15.0	17.0
3	16.0	11.5	6.0	3.5	3.5	3.5	4.0	5.5	11.5	15.0	15.5	17.0
4	16.0	11.5	6.0	3.5	3.5	3.5	4.0	6.0	12.0	15.0	15.5	17.0
5	16.0	11.0	6.0	3.5	3.5	3.5	4.0	6.0	12.0	15.0	15.5	17.0
6	16.0	11.0	6.0	3.5	3.5	3.5	4.5	6.0	13.0	16.0	15.5	16.5
7	16.0	10.5	6.0	3.5	3.5	4.0	4.5	6.0	12.5	15.5	15.5	16.5
8	16.0	10.0	6.0	3.5	3.5	4.0	4.5	7.0	12.5	15.5	16.0	16.5
9	16.0	10.0	6.0	3.5	3.5	4.0	4.5	8.0	13.0	15.0	16.0	16.5
10	16.0	10.0	5.5	3.5	3.5	4.0	5.0	9.0	13.0	15.0	16.0	16.5
11	16.0	10.0	5.5	3.5	3.5	4.0	5.0	7.5	13.0	15.0	16.0	16.5
12	15.5	9.5	5.5	3.5	4.0	4.0	5.0	7.5	13.0	15.0	16.0	16.5
13	15.0	9.5	5.5	3.5	4.0	4.0	5.0	9.0	13.5	15.0	16.0	16.5
14	15.0	9.5	5.0	3.5	4.0	4.0	5.0	9.0	13.0	15.0	16.0	16.5
15	14.5	9.0	5.0	3.5	4.0	4.0	5.0	9.0	13.0	15.0	16.0	17.0
16	14.5	9.0	5.0	3.5	4.0	4.0	5.0	10.0	14.0	15.0	16.0	17.0
17	14.5	9.0	5.0	3.5	4.0	4.0	5.0	11.0	14.0	15.0	17.0	17.0
18	14.5	9.0	5.0	3.5	4.0	4.0	5.0	10.0	14.0	15.0	16.0	17.0
19	14.5	9.0	4.5	3.5	4.0	4.0	5.5	10.0	14.0	15.0	16.5	17.0
20	14.0	9.0	4.0	3.5	4.0	4.0	5.5	10.0	14.0	15.0	16.0	17.0
21	14.0	8.5	4.0	3.5	4.0	4.0	5.5	10.0	14.0	15.0	16.0	17.0
22	14.0	8.0	4.0	3.5	4.0	4.0	5.5	10.0	14.0	15.0	17.0	17.0
23	13.0	8.0	3.5	3.5	4.0	4.0	5.5	10.5	14.0	15.0	17.0	17.0
24	13.0	8.0	3.5	3.5	4.0	4.0	5.5	11.0	14.5	15.0	17.0	17.5
25	12.5	8.0	3.5	3.5	4.0	4.0	5.5	11.0	14.0	15.0	17.0	17.0
26	12.5	7.5	3.5	3.5	4.0	4.0	5.5	11.0	14.5	15.5	16.5	16.5
27	12.0	7.5	3.5	3.5	4.0	4.0	5.5	11.5	14.5	15.0	17.0	16.5
28	12.0	7.0	3.5	3.5	4.0	4.0	6.0	11.5	14.5	15.0	17.0	17.0
29	12.0	7.0	3.5	3.5	4.0	4.0	5.5	11.5	15.0	15.5	17.0	17.0
30	12.0	6.5	3.5	3.5	---	4.0	6.0	12.0	15.0	15.0	17.0	17.0
31	11.5	---	3.5	3.5	---	4.0	---	12.0	---	15.5	17.0	---
MONTH	14.5	9.0	5.0	3.5	4.0	4.0	5.0	9.0	13.5	15.0	16.0	17.0

YEAR MAX 17.5 MIN 3.5 MEAN 9.5

06062500 TENMILE CREEK NEAR RIMINI,MT

LOCATION.--Lat 46°31'27", long 112°15'22", in NW¼SW¼NE¼ sec.20, T.9 N., R.5 W., Lewis and Clark County, Hydrologic Unit 10030101, Helena National Forest, on left bank at U.S. Forest Service Moose Creek picnic grounds, 500 ft (152 m) upstream from Moose Creek and 2.5 mi (4.0 km) north of Rimini.

DRAINAGE AREA.--32.7 mi^2 (84.7 km^2).

PERIOD OF RECORD.--October 1914 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1917, 1921, 1924-25. WSP 1509: 1915, 1916-17(M), 1920(M), 1927(M), 1928-30, 1947(M), 1948, 1950(M). WSP 1559: Drainage area. WSP 1709: 1959.

GAGE.--Water-stage recorder and concrete control since Oct. 20, 1937. Altitude of gage is 4,850 ft (1,478 m), from topographic map. Prior to Dec. 17, 1934, water-stage recorder at site 40 ft (12 m) downstream at different datum and different control.

REMARKS.--Records good. Flow regulated by Chessman and Scott Reservoirs on tributaries above station, combined capacity, 2,340 acre-ft (2.89 hm^3). Small diversions above station for water supply for city of Helena.

AVERAGE DISCHARGE.--62 years, 17.9 ft^3/s (0.507 m^3/s), 12,970 acre-ft/yr (16.0 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 995 ft^3/s (28.2 m^3/s) June 19, 1975, gage height, 4.89 ft (1.490 m); maximum gage height, 4.98 ft (1.518 m), May 27, 1917, site and datum then in use; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 80 ft^3/s (2.27 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 14	1700	*379	10.7	*3.52	1.073	June 11	1200	93	2.63	2.69	0.820
May 25	0600	256	7.25	3.26	0.994	June 16	2400	120	3.40	2.82	0.860
June 5	0100	124	3.51	2.83	0.863	June 24	1500	101	2.86	2.73	0.832

Minimum discharge, 0.79 ft^3/s (0.022 m^3/s) Sept. 16, 17, 29, 30, gage height, 1.29 ft (0.393 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	6.4	3.6	3.6	1.8	1.4	3.6	29	105	29	6.6	.97
2	1.2	7.4	9.2	3.6	1.8	1.2	2.1	41	92	25	11	.91
3	.97	9.2	8.2	3.5	1.8	1.8	2.1	66	88	23	8.0	1.0
4	1.1	11	8.0	3.5	1.9	1.8	3.6	107	88	23	11	1.2
5	.97	11	7.4	3.5	1.6	1.9	5.6	124	99	19	6.4	.91
6	1.0	9.8	7.4	3.2	1.8	2.0	8.3	136	93	18	5.0	1.8
7	1.1	9.2	7.7	2.6	1.8	2.1	12	136	95	18	3.5	1.1
8	1.4	7.7	7.4	2.4	1.7	2.1	16	164	92	16	5.2	.91
9	1.7	7.7	8.3	2.3	1.6	2.3	20	194	86	14	4.2	.85
10	2.4	8.0	8.5	2.4	1.5	2.6	23	237	76	12	4.0	.85
11	4.2	5.9	7.7	2.7	1.4	2.4	31	283	83	12	1.9	.97
12	3.8	5.9	7.7	2.6	1.6	2.1	41	223	68	13	1.7	1.8
13	4.8	4.0	6.1	1.9	1.7	3.2	49	248	63	12	1.7	1.2
14	5.4	5.6	6.1	1.9	2.4	2.3	48	354	61	10	1.6	.97
15	6.1	5.9	6.1	2.6	1.6	1.4	45	304	54	7.7	1.5	.91
16	5.6	6.6	5.2	4.2	1.6	1.4	38	271	55	6.4	1.6	.85
17	6.4	5.2	5.0	4.8	1.8	2.1	35	296	95	5.9	1.5	.97
18	10	4.8	5.0	3.6	2.1	3.5	32	267	75	5.4	2.1	2.7
19	10	3.5	4.8	3.2	3.0	2.1	29	271	66	6.1	1.6	6.9
20	13	3.5	4.2	3.3	1.9	1.7	27	252	73	21	1.3	4.2
21	12	4.2	4.0	4.6	1.6	1.9	24	227	71	19	1.2	3.0
22	11	4.0	3.8	3.8	1.8	2.7	24	230	93	12	3.2	3.5
23	8.9	7.1	4.2	3.3	2.6	2.1	24	227	90	7.7	9.5	3.6
24	7.7	7.4	4.2	2.7	1.7	2.3	23	216	83	5.9	11	1.7
25	7.1	4.8	4.4	3.0	1.5	1.7	25	230	73	5.2	3.5	.97
26	7.1	4.6	5.0	4.8	1.6	1.8	20	181	66	3.8	1.4	1.6
27	6.9	3.5	4.8	4.4	1.5	1.6	23	170	57	2.9	1.2	3.0
28	7.4	3.2	4.4	3.2	1.8	1.6	25	170	45	2.1	1.2	1.6
29	7.1	3.2	4.4	4.2	1.4	1.5	24	148	37	2.1	1.1	.85
30	6.6	3.0	4.6	2.6	---	1.7	24	133	33	2.1	1.0	.79
31	5.9	---	3.6	1.8	---	2.7	---	122	---	2.6	.97	---
TOTAL	170.14	183.3	181.0	99.8	51.9	63.0	707.3	6057	2253	361.9	116.67	52.58
MEAN	5.49	6.11	5.84	3.22	1.79	2.03	23.6	195	75.1	11.7	3.76	1.75
MAX	13	11	9.2	4.8	3.0	3.5	49	354	105	29	11	6.9
MIN	.97	3.0	3.6	1.8	1.4	1.2	2.1	29	33	2.1	.97	.79
AC-FT	337	364	359	198	103	125	1400	12010	4470	718	231	104

CAL YR 1975 TOTAL 14974.93 MEAN 41.0 MAX 857 MIN .48 AC-FT 29700
WTR YR 1976 TOTAL 10297.59 MEAN 28.1 MAX 354 MIN .79 AC-FT 20430

06066500 MISSOURI RIVER BELOW HOLTER DAM, NEAR WOLF CREEK, MT

LOCATION.--Lat 46°59'41", long 112°00'37", in NE¼SW¼SE¼ sec.5, T.14 N., R.3 W., Lewis and Clark County, Hydrologic Unit 10030102, on left bank 0.4 mi (0.6 km) downstream from Holter Dam, 2.8 mi (4.5 km) southeast of Wolf Creek, and at mile 2,211.13 (3,557.7 km) (revised).

DRAINAGE AREA.--17,149 mi^2 (44,416 km^2).

PERIOD OF RECORD.--October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,464.11 ft (1,055.861 m) above mean sea level.

REMARKS.--Records good. Flow regulated by nine smaller irrigation reservoirs and powerplants (see p.577), Clark Canyon Reservoir (see p.37), and Canyon Ferry Reservoir (see p.69). Diversions for irrigation of about 594,400 acres (2,410 km^2).

AVERAGE DISCHARGE.--31 years, 5,614 ft^3/s (159.0 m^3/s), 4,067,000 acre-ft/yr (5.01 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,800 ft^3/s (986 m^3/s) June 8, 1948, gage height, 11.70 ft (3.566 m); minimum, probably less than 250 ft^3/s (7.08 m^3/s) during powerplant shutdown July 26, 1968; minimum daily, 747 ft^3/s (21.2 m^3/s) May 27, 1962.

EXTREMES FOR CURRENT RECORD.--Maximum discharge, 17,930 ft^3/s (508 m^3/s) June 25, gage height, 7.85 ft (2.393 m); minimum daily, 5,040 ft^3/s (142.7 m^3/s) Oct. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5850	7800	7480	6270	6250	6360	8700	12900	15200	12700	6280	6300
2	6330	7670	7580	6390	6220	6490	8620	13000	14300	10400	6310	6820
3	7020	7720	7660	6640	6320	6460	8560	12900	14900	10600	6410	6380
4	6970	7960	7750	6640	6300	6490	8610	13200	14600	10600	6400	6270
5	6840	8220	7900	6660	6420	6370	8630	13600	14800	10600	6410	6220
6	5950	8520	7910	6490	6640	6210	8620	13600	14900	9670	6200	6290
7	5600	8480	7900	6200	6440	6150	8610	13600	14900	8250	6230	6420
8	5530	8370	7950	6110	6250	6550	8630	13500	13000	7340	6510	6280
9	5340	8300	7920	6060	6060	6970	8760	13500	9710	7700	6350	6150
10	5080	8090	8090	6030	5800	6940	9030	14500	8440	6950	6240	6150
11	5200	7920	8090	6030	5790	7050	9220	14900	9070	6670	6240	6490
12	5290	8020	8030	6060	5810	7140	9420	14600	10200	6220	6480	6420
13	5160	7940	8110	6080	5870	7570	9680	14400	10700	5930	6450	6090
14	5040	7850	7950	5990	6300	7650	10000	15000	10800	5950	6330	5980
15	5210	7530	7890	6080	6290	7990	10700	15100	10500	5680	6200	6810
16	5660	7610	7950	6110	6260	8780	13200	15000	10400	5560	6310	6600
17	5630	7720	7530	6130	6280	8880	14200	14900	10500	5640	6400	6270
18	6090	7670	7140	6220	6270	8780	13700	14900	10700	5660	6330	6520
19	5640	7440	6980	6220	6280	8690	13300	14800	11000	5710	6260	6460
20	5530	7290	6680	6200	6270	8700	13200	14800	11000	5730	6400	6420
21	5770	7260	6680	6180	6270	8750	13000	14800	11000	5690	6380	6450
22	5970	7210	6830	6150	6260	8670	13100	14500	11000	5660	6680	6380
23	5970	7190	6810	6270	6250	8720	13100	14300	11400	5750	6550	6220
24	6380	7110	6680	6300	6270	8700	13000	14400	15800	5690	6530	6190
25	6830	7150	6270	6270	6110	8660	13000	14600	17000	5960	6430	6250
26	7130	7170	6250	6320	6140	8700	13100	14500	16600	6690	6470	6280
27	7200	7330	6420	6270	6170	8740	13100	14500	16000	6420	6460	6300
28	7870	7340	6540	6270	6180	8760	13100	14600	15700	5860	6400	6350
29	8790	7230	6420	6270	6190	8730	13000	14900	15500	5550	6260	6460
30	8510	7460	6320	6300	---	8650	13000	15000	15400	5760	6040	6450
31	8220	---	6370	6270	---	8580	---	15200	---	6030	6070	---
TOTAL	193600	230570	226080	193480	179960	241880	333890	444000	385020	218010	197010	190670
MEAN	6245	7686	7293	6241	6206	7803	11130	14320	12830	7032	6355	6356
MAX	8790	8520	8110	6660	6640	8880	14200	15200	17000	12700	6680	6820
MIN	5040	7110	6250	5990	5790	6150	8560	12900	8440	5550	6040	5980
AC-FT	384000	457300	448400	383800	357000	479800	662300	880700	763700	433600	390800	378200

CAL YR 1975 TOTAL 2934920 MEAN 8041 MAX 22800 MIN 4930 AC-FT 5821000
WTR YR 1976 TOTAL 3034770 MEAN 8292 MAX 17000 MIN 5040 AC-FT 6019000

06078200 MISSOURI RIVER NEAR ULM, MT

LOCATION.--Lat 47°26'09", long 111°23'07", in NE¼NW¼NW¼ sec.5, T.19 N., R.3 E., Cascade County, Hydrologic Unit 10030102, on left bank 5.6 mi (9.0 km) east of Ulm and 9.1 mi (14.6 km) downstream from Smith River.

DRAINAGE AREA.--20,941 mi^2 (54,237 km^2).

PERIOD OF RECORD.--August 1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,313.27 ft (1,009.885 m) above mean sea level.

REMARKS.--Records good except those for winter period and July to September which are fair. Flow regulated by 10 smaller irrigation reservoirs and powerplants (see p.577), Clark Canyon Reservoir (see p.37), and Canyon Ferry Reservoir (see p.69). Diversions for irrigation of about 630,400 acres (2,550 km^2) above station.

AVERAGE DISCHARGE.--19 years, 6,868 ft^3/s (194.5 m^3/s), 4,975,900 acre-ft/yr (6.14 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,500 ft^3/s (779 m^3/s) June 22, 1964, gage height, 14.44 ft (4.401 m); maximum gage height, 14.64 ft (4.462 m) June 22, 1975; minimum daily discharge, 1,700 ft^3/s (48.1 m^3/s) June 17, 1961.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1953 reached a stage of about 17 ft (5.2 m); discharge, 35,000 ft^3/s (990 m^3/s). Flood in June 1948 reached a stage of about 16 ft (4.9 m); discharge, 32,000 ft^3/s (906 m^3/s). From information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 23,200 ft^3/s (657 m^3/s) May 7, gage height, 12.73 ft (3.880 m); minimum daily, 5,800 ft^3/s (164 m^3/s) Jan. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7010	8910	8160	6330	7370	7000	9130	15300	17400	17600	6920	6550
2	6470	8530	8070	6160	7350	6700	9350	16400	17200	15400	7150	6730
3	6620	8390	8620	6000	7290	7000	9340	17600	16800	12600	7210	7050
4	7290	8320	9180	5800	6890	7000	9210	18700	16900	12300	7340	6800
5	7260	8550	8870	6300	6600	7000	9190	20600	16800	12200	7290	6650
6	7210	8780	8700	6600	6800	6800	9300	22400	16700	12200	7240	6650
7	6610	9000	8590	6400	7200	6600	9530	23100	17000	11300	7040	6730
8	6270	8950	8560	6200	7600	6600	9780	22300	16900	10000	7060	6840
9	6220	8850	8510	6200	8200	7000	9970	21700	15600	9070	7250	6770
10	6090	8770	8290	6600	7600	7200	10200	21700	12900	9190	7110	6650
11	5900	8560	8350	7000	7400	8050	10500	22100	11200	8620	7030	6640
12	6160	8450	6300	7200	7200	8270	10700	22800	11500	8360	7010	6870
13	6450	8540	8290	7400	7200	8150	10900	22100	12200	8050	7130	6940
14	6520	8490	8450	7400	7270	8420	11200	21300	12500	7690	7120	6680
15	6480	8480	9000	7600	7410	8510	11400	21600	12800	7570	6970	6550
16	6650	8120	8990	7800	7460	8780	12200	21800	12300	7320	6860	7040
17	7030	8220	8810	7600	7370	9440	14100	21200	12200	7100	6860	7060
18	6990	8310	8890	7600	7350	9980	15100	20600	12900	7090	6930	6760
19	7170	8220	7910	7600	7240	10300	14900	20300	13000	7100	6870	6910
20	6750	7980	7480	7800	7240	10100	14400	19900	12900	7230	6810	6990
21	6600	7840	7170	7900	7250	9820	14200	19400	12800	7250	6830	6990
22	6840	7760	7140	7800	7250	9740	13900	19200	12900	7100	6840	6960
23	7030	7770	7230	7800	7250	9560	13900	18800	12900	7030	7060	6880
24	7010	7820	7240	7990	7200	9510	13900	18400	13900	7030	7160	6750
25	7310	7830	7130	7690	7220	9480	13900	18300	16500	6970	7150	6730
26	7690	7620	6870	7860	7090	9390	14200	18300	18700	7130	7010	6800
27	7920	7760	6850	7840	7110	9360	14300	17900	19200	7610	6950	6830
28	8040	7850	6960	7570	7100	9340	14400	17700	18400	7460	6950	6840
29	8490	7820	7020	7520	7060	9340	14400	17500	18100	6980	6890	6860
30	9220	8020	6990	7500	---	9310	14600	17500	17700	6580	6770	6940
31	9080	---	6790	7490	---	9210	---	17400	---	6700	6570	---
TOTAL	218380	248730	247410	222550	210570	262960	362100	613900	448800	275820	217380	204440
MEAN	7045	8291	7981	7179	7261	8483	12070	19800	14960	8897	7012	6815
MAX	9220	9000	9180	7990	8200	10300	15100	23100	19200	17600	7340	7060
MIN	5900	7760	6790	5800	6600	6600	9130	15300	11200	6580	6570	6550
AC-FT	433200	493400	490700	441400	417700	521600	718200	1218000	890200	547100	431200	405500

CAL YR 1975 TOTAL 3650610 MEAN 10030 MAX 27400 MIN 5100 AC-FT 7261000
WTR YR 1976 TOTAL 3533040 MEAN 9653 MAX 23100 MIN 5800 AC-FT 7008000

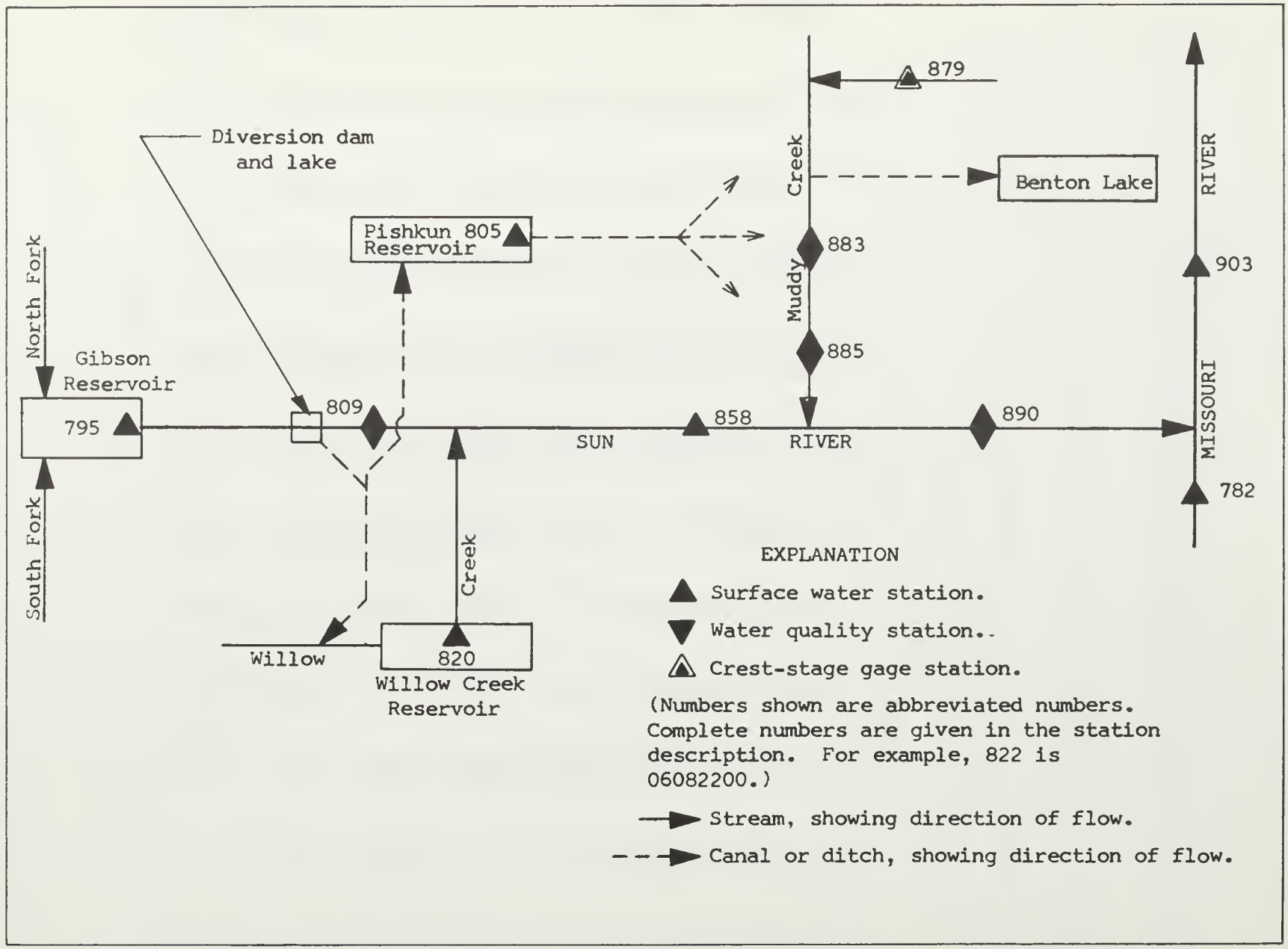


Figure 7 Schematic diagram showing diversions and storage in Sun River basin.

06080900 SUN RIVER BELOW DIVERSION DAM, NEAR AUGUSTA, MT

LOCATION.--Lat 47°37'10", long 112°41'28", near center of east line of sec.36, T.22 N., R.9 W., Lewis and Clark County, Hydrologic Unit 10030104, Lewis and Clark National Forest, on road bridge 1 mi (2 km) downstream from diversion dam, 16.5 mi (26.5 km) northwest of Augusta, and at mile 95.6 (153.8 km).

DRAINAGE AREA.--609 mi^2 (1,577 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,370 ft (1,332 m), from topographic map.

REMARKS.--Water-discharge records good. Flow regulated by Gibson Dam (see p.579). Diversions above station into Pishkun Canal and Willow Creek feeder canal for irrigation of about 91,000 acres (368 km^2) below station.

AVERAGE DISCHARGE.--9 years, 478 ft^3/s (13.54 m^3/s), 346,300 acre-ft/yr (427 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,000 ft^3/s (906 m^3/s) June 19, 1975, gage height, 19.00 ft (5.791 m); minimum daily, 20 ft^3/s (0.57 m^3/s) Dec. 16, 1974.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge known, 59,700 ft^3/s (1,690 m^3/s) June 9, 1964, from computation of peak flow over dam 1 mi (2 km) upstream; gage-height, about 24.8 ft (7.56 m), from levels of Aug. 12, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,470 ft^3/s (240 m^3/s) May 14, gage height, 11.11 ft (3.386 m); minimum daily, 69 ft^3/s (1.95 m^3/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	69	433	368	127	262	125	220	1310	2580	977	175	240
2	120	433	387	255	200	120	217	1330	2390	1700	173	237
3	118	429	387	255	196	120	214	1520	2250	1370	170	237
4	104	433	455	259	209	125	217	2400	2140	728	178	237
5	101	433	520	198	220	133	220	2810	2080	581	214	237
6	101	429	515	199	232	121	222	2780	2200	603	238	237
7	107	473	515	195	285	121	225	2790	2460	701	240	231
8	104	515	515	195	285	123	214	2830	2610	720	250	222
9	104	510	515	197	275	167	217	2910	3690	565	246	220
10	102	510	515	265	275	214	220	3050	4420	473	342	220
11	106	510	429	268	275	211	225	3230	4510	421	249	220
12	107	510	368	205	275	211	211	3780	3580	429	246	214
13	111	510	364	205	275	214	211	4420	2790	372	240	209
14	107	491	360	202	272	211	335	7240	2180	278	231	209
15	107	505	234	197	272	211	815	6800	1820	220	231	206
16	106	510	94	205	275	211	1060	5110	1480	198	234	203
17	136	505	92	268	200	217	1140	4740	959	193	225	201
18	372	505	96	268	121	222	1130	4870	756	191	231	201
19	375	501	96	205	121	217	1060	4370	598	188	240	196
20	372	505	165	173	121	214	1020	4100	505	180	240	193
21	375	505	201	125	120	211	1130	3770	515	175	240	191
22	375	505	154	180	125	214	1270	3610	525	165	240	185
23	375	505	141	210	123	214	1360	3710	535	161	240	183
24	375	505	168	255	121	211	1400	4250	540	154	240	178
25	375	505	225	259	123	211	1390	4590	535	147	243	178
26	375	429	240	187	123	211	1490	3830	535	139	240	173
27	375	360	240	192	121	211	1530	3180	525	139	240	168
28	292	360	234	176	121	211	1330	3580	515	141	240	165
29	400	360	183	161	129	211	1230	3340	515	143	237	178
30	433	356	197	110	---	214	1290	2810	515	178	240	185
31	429	---	163	259	---	217	---	2640	---	175	240	---
TOTAL	7108	14040	9136	6455	5752	5844	22813	111700	51253	12805	7233	6154
MEAN	229	468	295	208	198	189	760	3603	1708	413	233	205
MAX	433	515	520	268	285	222	1530	7240	4510	1700	342	240
MIN	69	356	92	110	120	120	211	1310	505	139	170	165
AC-FT	14100	27850	18120	12800	11410	11590	45250	221600	101700	25400	14350	12210

CAL YR 1975 TOTAL 317394 MEAN 870 MAX 25400 MIN 24 AC-FT 629600
WTR YR 1976 TOTAL 260293 MEAN 711 MAX 7240 MIN 69 AC-FT 516300

06080900 SUN RIVER BELOW DIVERSION DAM, NEAR AUGUSTA, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to current year.
WATER TEMPERATURES: October 1967 to current year.

INSTRUMENTATION.--Temperature recorder October 1971-September 1972.

REMARKS.--Flow regulated by Gibson Dam. Diversions into two large feeder canals upstream from station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 494 micromhos Dec. 1, 1973, Mar. 18, 1974; minimum daily, 170 micromhos on several days in 1972.
WATER TEMPERATURES: Maximum daily, 18.5°C Aug. 1, 1973; minimum daily, 0.0°C on several days during winter periods most years.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 398 micromhos Feb. 24; minimum daily, 183 micromhos June 15, 16.
WATER TEMPERATURES: Maximum daily, 15.5°C Aug. 12; minimum daily, 0.0°C on several days during January to March.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE (DEG C)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
OCT												
29...	1200	425	312	6.0	170	30	48	11	2.0	.1	.8	165
DEC												
02...	1230	387	317	3.0	170	35	49	11	2.0	.1	.7	162
29...	1030	147	356	2.0	180	36	52	13	2.2	.1	.8	180
JAN												
27...	1000	152	378	2.5	200	48	55	14	1.7	.1	.8	179
FEB												
25...	1000	125	384	2.0	190	45	54	14	2.1	.1	.8	180
MAR												
30...	1040	214	366	5.0	180	38	50	14	2.6	.1	.9	176
APR												
29...	1030	1140	302	5.5	160	19	44	11	2.4	.1	.8	166
JUN												
07...	1015	2480	198	7.0	100	3	29	7.2	1.2	.1	.5	121
JUL												
06...	1440	603	202	11.0	100	5	30	7.2	.9	.0	.6	121
AUG												
10...	1150	334	247	12.5	130	18	37	9.3	1.0	.0	.7	138
SEP												
01...	1045	240	286	13.5	150	19	42	10	1.6	.1	.7	155

DATE	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED ORTHO-PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT												
29...	33	.8	.2	4.3	182	.25	209	.02	.00	.01	0	0
DEC												
02...	32	1.4	.2	4.3	181	.25	189	.02	.00	.00	0	5
29...	41	.6	.2	4.6	204	.28	81.0	.09	.00	.00	10	0
JAN												
27...	55	.8	.2	4.6	221	.30	90.7	.07	.00	.00	10	0
FEB												
25...	55	.7	.2	4.5	220	.30	74.2	.08	.01	.00	0	0
MAR												
30...	51	.3	.2	4.7	211	.29	122	.03	.00	.00	0	0
APR												
29...	27	1.4	.1	4.2	173	.24	532	.04	.00	.00	10	0
JUN												
07...	6.8	.6	.1	4.3	109	.15	730	.00	.01	.00	20	0
JUL												
06...	10	.4	.2	4.0	113	.15	184	.00	.01	.00	30	0
AUG												
10...	15	.5	.1	4.2	136	.19	123	.01	.02	.01	0	0
SEP												
01...	26	.8	.2	4.4	162	.22	105	.02	.00	.00	10	0

06080900 SUN RIVER BELOW DIVERSION DAM, NEAR AUGUSTA, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	304	299	313	351	350	373	338	292	196	191	208	273
2	301	296	311	360	345	368	333	292	196	189	210	275
3	299	299	311	344	360	375	350	295	195	190	216	272
4	311	297	317	340	347	376	341	290	193	197	219	272
5	347	299	311	341	331	378	345	289	193	196	222	272
6	357	300	314	348	369	380	347	287	193	196	222	274
7	365	299	312	353	351	386	348	288	193	197	225	273
8	360	295	309	352	360	379	345	282	191	196	230	264
9	361	238	307	349	345	379	336	277	189	197	232	261
10	356	293	308	348	346	359	326	275	189	197	239	264
11	366	293	303	340	342	354	321	264	187	198	238	262
12	385	291	247	340	350	367	323	261	188	197	241	263
13	376	296	311	344	355	356	322	252	187	198	248	263
14	354	286	310	349	339	349	311	249	185	200	250	265
15	367	295	313	351	338	354	296	229	183	201	251	265
16	371	294	320	360	338	356	292	226	183	201	253	265
17	377	295	342	348	353	359	295	223	184	203	256	262
18	337	294	365	350	372	352	292	219	188	201	262	268
19	306	296	329	349	377	359	292	217	187	204	263	268
20	286	296	379	353	370	351	291	216	201	202	265	267
21	276	299	356	360	380	350	291	213	192	204	264	265
22	---	300	348	368	387	351	290	211	192	204	268	267
23	307	300	356	360	389	355	290	209	191	207	269	269
24	---	300	369	351	398	348	288	208	192	205	271	268
25	309	299	360	348	390	342	288	205	192	207	271	269
26	306	299	350	347	369	342	287	204	193	207	269	269
27	299	305	361	364	373	336	288	205	194	209	271	273
28	301	306	---	359	369	336	287	203	193	210	268	276
29	310	307	348	363	374	---	289	201	193	212	269	274
30	302	307	354	369	---	350	288	200	194	211	271	271
31	300	---	347	372	---	340	---	203	---	212	272	---
MONTH	331	296	329	353	361	359	311	241	191	201	249	268

YEAR MAX 398 MIN 183 MEAN 290

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.5	6.0	2.0	0.0	2.0	0.0	2.0	4.5	6.0	9.0	12.5	13.0
2	9.5	7.0	3.5	0.5	3.0	0.0	2.0	5.0	6.5	9.5	12.5	---
3	9.0	6.5	4.0	1.0	1.0	0.0	3.0	4.0	6.5	9.0	14.5	---
4	10.0	7.0	4.0	0.5	0.5	0.5	5.0	4.5	5.5	10.0	13.0	---
5	11.0	5.0	2.0	1.0	0.0	1.0	3.0	4.0	7.0	9.0	14.0	13.5
6	10.0	6.0	1.0	0.0	0.5	0.5	3.0	5.0	7.0	11.5	12.5	13.5
7	7.0	5.5	3.0	0.0	1.5	1.5	5.0	5.0	7.0	10.0	12.0	12.0
8	6.0	5.0	2.5	0.5	1.5	1.5	4.5	5.0	8.0	10.0	12.0	11.5
9	6.5	5.0	3.5	1.0	1.0	2.0	2.0	5.5	7.5	10.0	12.5	11.0
10	6.5	4.0	2.0	1.0	1.0	3.0	2.0	6.0	10.0	11.5	14.0	12.0
11	8.0	4.5	1.5	1.0	1.0	2.0	---	6.0	8.0	10.5	14.0	12.5
12	8.0	3.0	0.5	1.0	2.0	0.5	3.0	5.5	9.0	10.0	15.5	12.5
13	6.0	5.0	0.5	1.0	2.0	0.5	5.5	6.0	8.0	9.5	15.0	12.0
14	6.0	5.5	1.0	2.0	1.0	0.5	5.0	5.0	9.0	10.0	13.5	14.0
15	6.5	5.0	1.0	2.0	1.5	1.0	4.0	5.0	8.5	9.0	13.5	11.5
16	6.0	4.5	0.5	3.5	2.0	1.5	3.5	5.0	8.0	11.0	13.0	11.5
17	6.0	4.0	0.5	5.0	1.0	2.5	3.0	5.5	7.0	10.5	12.5	14.0
18	8.0	3.0	0.5	3.0	1.5	3.0	3.5	5.5	10.0	11.0	13.0	11.5
19	7.0	2.5	1.0	2.0	1.0	2.0	3.0	5.0	9.5	13.0	12.5	13.0
20	7.0	3.0	2.0	1.5	1.0	2.0	3.0	5.5	8.0	11.0	13.0	11.0
21	6.5	3.0	0.5	1.5	1.0	2.0	2.5	5.0	8.5	11.5	14.5	11.5
22	---	4.0	1.0	2.0	2.5	2.0	3.5	6.5	8.0	11.5	13.0	12.5
23	4.5	3.5	1.0	1.0	2.0	2.5	4.0	5.5	8.5	12.5	14.0	11.5
24	---	3.5	3.0	0.5	2.5	2.0	4.5	5.5	8.0	12.5	13.5	12.5
25	5.5	2.0	2.5	0.5	2.0	1.5	4.0	6.0	8.0	12.0	13.0	12.0
26	6.0	2.0	2.5	1.0	2.0	1.5	3.0	6.5	7.5	12.0	12.0	---
27	6.0	2.5	1.5	2.0	1.5	1.0	4.0	6.0	10.0	12.5	12.0	11.0
28	6.0	1.0	---	2.0	1.0	1.0	3.5	7.0	7.5	12.5	13.0	11.0
29	5.0	2.0	3.5	2.5	0.0	---	3.5	6.0	12.0	10.5	13.5	11.5
30	7.0	0.5	1.0	3.0	---	2.5	4.0	7.0	9.5	12.0	13.5	12.0
31	5.5	---	0.5	3.5	---	2.0	---	6.5	---	14.0	13.5	---
MONTH	7.0	4.0	2.0	1.5	1.5	1.5	3.5	5.5	8.0	11.0	13.0	12.0

YEAR MAX 15.5 MIN 0.0 MEAN 6.0

06085800 SUN RIVER AT SIMMS, MT

LOCATION.--Lat 47°30'06", long 111°55'56", in NW¼NW¼SE¼ sec.12, T.20 N., R.3 W., Cascade County, Hydrologic Unit 10030104, on left bank 500 ft (152 m) downstream from county bridge, 0.7 mi (1.1 km) north of Simms, and 0.7 mi (1.1 km) downstream from Simms Creek.

DRAINAGE AREA.--1,320 mi^2 (3,419 km^2).

PERIOD OF RECORD.--May to June 1953 (in WSP 1320-B), May to June 1964 (in WSP 1840-B), March 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,546.58 ft (1,080.998 m) above mean sea level.

REMARKS.--Records good except those for winter period, which are poor. Flow regulated by Gibson, Pishkun, Willow Creek, and Nilan Reservoirs (see p.579-580). Diversions for irrigation of about 105,000 acres (425 km^2) above station.

AVERAGE DISCHARGE.--10 years, 599 ft^3/s (16.96 m^3/s), 434,000 acre-ft/yr (535 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft^3/s (1,416 m^3/s), revised, June 9, 1964, gage height, about 13.7 ft (4.18 m), from floodmark, from slope-area measurement of peak flow at site 4 mi (6 km) upstream; minimum daily, 37 ft^3/s (1.05 m^3/s) Oct. 5, 1970 and Dec. 23, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,200 ft^3/s (289 m^3/s) May 15, gage height, 7.88 ft (2.402 m); minimum daily, 106 ft^3/s (3.00 m^3/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	106	606	427	220	390	170	280	1950	2500	475	255	238
2	113	598	558	250	350	230	293	2000	2300	1270	276	219
3	124	591	830	260	300	300	288	2000	2200	1290	298	204
4	139	591	672	290	310	399	284	2580	2140	794	305	205
5	139	584	688	300	340	416	284	4070	2020	516	272	205
6	142	584	704	250	360	486	280	4300	2030	489	268	209
7	164	577	712	210	360	584	288	4200	2230	514	289	218
8	167	635	688	210	360	665	288	3960	2320	605	353	215
9	185	657	688	230	360	635	267	4090	2510	523	339	217
10	244	657	672	280	360	524	263	4170	3430	464	335	223
11	263	665	635	320	355	338	255	4280	3950	392	394	222
12	363	657	530	330	355	338	259	4300	3660	414	329	224
13	456	665	474	280	355	399	255	4920	2880	419	309	225
14	564	665	432	240	350	416	251	6270	2380	364	288	227
15	480	635	416	290	350	405	389	9040	1900	296	282	232
16	394	642	310	360	350	438	894	6530	1680	249	285	226
17	353	635	271	400	350	399	1160	5460	1320	204	278	212
18	334	620	188	390	290	421	1160	5290	904	202	279	267
19	524	642	276	370	210	389	1150	4870	798	233	276	268
20	543	665	244	320	215	329	1060	4370	597	234	269	247
21	570	642	271	260	215	329	1050	4100	544	276	263	234
22	606	657	343	280	215	319	1220	3810	509	261	270	224
23	627	672	348	300	210	310	1340	3790	506	255	280	219
24	591	627	310	350	210	306	1420	4010	545	247	314	216
25	584	635	334	380	205	301	1460	4320	541	263	293	255
26	584	627	399	400	200	280	1560	4010	547	243	284	253
27	584	444	410	410	190	310	1720	3260	534	212	277	237
28	577	389	338	410	180	288	1830	3180	522	208	274	222
29	486	315	432	380	150	293	1610	3290	496	209	269	217
30	591	301	348	380	---	288	1840	2830	476	220	253	212
31	613	---	194	390	---	280	---	2570	---	249	247	---
TOTAL	12210	17880	14142	9740	8445	11585	24698	127820	49149	12610	9003	6792
MEAN	394	596	456	314	291	374	823	4123	1638	407	290	226
MAX	627	672	830	410	390	665	1840	9040	3950	1290	394	268
MIN	106	301	188	210	150	170	251	1950	476	202	247	204
AC-FT	24220	35460	28050	19320	16750	22980	48990	253500	97490	25010	17860	13470

CAL YR 1975 TOTAL 456154 MEAN 1250 MAX 35000 MIN 79 AC-FT 904800
WTR YR 1976 TOTAL 304074 MEAN 831 MAX 9040 MIN 106 AC-FT 603100

06088300 MUDDY CREEK NEAR VAUGHN, MT

LOCATION.--Lat 47°37'30", long 111°38'05", in NW¼NE¼ sec.32, T.22 N., R.1 E., Cascade County, Hydrologic Unit 10030104, on left bank 200 ft (61 m) downstream from bridge on county road and 6.2 mi (10.0 km) northwest of Vaughn.

DRAINAGE AREA.--282 mi^2 (730 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1968 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,450 ft (1,052 m), from topographic map.

REMARKS.--Water-discharge records good except those for winter period, which are poor. Natural flow increased by wastage from Greenfields Irrigation Project. Diversions for irrigation of about 400 acres (1.62 km^2) above station. Pumped diversions from Muddy Creek above station in SW¼ sec.2, T.22 N., R.1 W., to supplement water supply for Benton Lake Wildlife Refuge are listed below.

AVERAGE DISCHARGE.--8 years, 127 ft^3/s (3.597 m^3/s), 92,010 acre-ft/yr (113 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,110 ft^3/s (88.1 m^3/s) May 7, 1975, gage height, 13.46 ft (4.103 m); minimum daily, 8.0 ft^3/s (0.23 m^3/s) Dec. 8, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 790 ft^3/s (22.4 m^3/s) Aug. 5, gage height, 6.31 ft (1.923 m); minimum daily, 18 ft^3/s (0.510 m^3/s) Jan. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	147	99	40	23	50	28	32	127	123	218	266	152
2	152	95	45	20	40	28	33	93	131	192	394	152
3	132	93	55	19	30	28	32	74	134	194	418	142
4	103	87	65	18	26	30	31	67	159	219	491	153
5	98	85	50	19	27	35	31	78	174	260	569	161
6	100	84	47	20	30	50	31	85	230	223	526	174
7	118	84	45	21	35	80	31	67	338	219	462	169
8	117	80	43	22	40	100	30	57	399	201	399	162
9	107	77	40	25	45	120	30	51	339	188	352	162
10	99	74	37	30	47	120	30	48	306	177	343	166
11	115	72	34	32	50	120	30	45	306	173	320	167
12	171	73	33	37	51	110	29	44	278	280	320	172
13	219	77	33	45	52	100	29	42	220	322	307	169
14	297	70	33	55	50	110	29	43	246	276	262	163
15	351	68	35	65	46	120	28	55	208	271	243	164
16	255	60	44	75	44	72	30	88	246	300	226	176
17	174	56	54	80	40	67	30	91	249	296	213	164
18	150	53	60	80	38	66	28	119	229	278	202	183
19	136	50	66	70	35	46	28	144	217	351	186	183
20	131	46	64	59	34	36	28	135	247	302	170	182
21	132	43	62	58	34	39	28	112	303	295	161	177
22	135	40	60	58	34	39	29	78	256	360	164	155
23	134	38	60	58	35	37	29	76	311	342	180	164
24	130	36	61	56	38	41	28	99	280	276	180	143
25	125	35	62	50	40	38	32	121	288	307	166	173
26	124	35	56	45	38	38	31	131	302	357	180	189
27	118	35	50	44	32	38	35	110	281	308	167	188
28	113	35	42	46	30	34	66	169	267	326	161	157
29	110	35	35	48	29	33	127	123	259	321	167	169
30	107	36	30	50	---	32	171	114	263	321	164	176
31	101	---	25	52	---	31	---	169	---	271	164	---
TOTAL	4501	1851	1466	1380	1120	1866	1176	2855	7587	8424	8523	5007
MEAN	145	61.7	47.3	44.5	38.6	60.2	39.2	92.1	253	272	275	167
MAX	351	99	66	80	52	120	171	169	399	360	569	189
MIN	98	35	25	18	26	28	28	42	123	173	161	142
AC-FT	8930	3670	2910	2740	2220	3700	2330	5660	15050	16710	16910	9930

CAL YR 1975 TOTAL 57084 MEAN 156 MAX 2250 MIN 15 AC-FT 113200
WTR YR 1976 TOTAL 45756 MEAN 125 MAX 569 MIN 18 AC-FT 90760

† Diversions, in acre-feet, to Benton Lake, furnished by Fish and Wildlife Service.

06088300 MUDDY CREEK NEAR VAUGHN, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to current year.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1968 to current year.
WATER TEMPERATURES: July 1968 to current year.
SUSPENDED DISCHARGE: July 1968 to current year.
REMARKS.--Flow affected by ice during most of winter months. Natural flow increased by wastage from Greenfields Irrigation Project.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 6,400 micromhos Apr. 29, 1976; minimum daily, 365 micromhos Feb. 20, 1969.
WATER TEMPERATURES: Maximum daily, 27.5°C July 6, 1975; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily, 9,870 mg/L Apr. 27, 1975; minimum daily observed, 11 mg/L Oct. 19, 1968, Oct. 19, 1972, Oct. 30, 1973.
SEDIMENT LOADS: Maximum daily, 48,000 tons (43,500 tonnes) May 7, 1975; minimum daily, 0.84 ton (0.74 tonne) Jan. 8, 1973.
EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 6,400 micromhos April 29; minimum daily, 544 micromhos June 12.
WATER TEMPERATURES: Maximum daily, 24.0°C July 6; minimum daily, 0.0°C on many days during November to March.
SEDIMENT CONCENTRATIONS: Maximum daily, 3,080 mg/L June 7; minimum daily, 29 mg/L Oct. 9.
SEDIMENT LOADS: Maximum daily, 2,790 tons (2,530 tonnes); minimum daily, 2.7 tons (2.4 tonnes).

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE (DEG C)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
OCT												
24...	1335	135	1500	4.0	580	250	79	93	130	2.3	3.1	405
NOV												
19...	0905	44	1400	.5	560	190	79	87	110	2.0	2.6	442
DEC												
18...	0925	60	--	.5	540	180	78	85	110	2.1	2.7	444
JAN												
20...	1415	59	1690	.0	610	330	83	97	160	2.8	5.7	342
FEB												
16...	1230	44	1950	.5	740	390	99	120	180	2.9	3.6	427
MAR												
16...	1110	80	1680	1.0	620	320	87	99	160	2.8	3.6	376
APR												
13...	1100	28	1800	11.5	680	340	89	110	170	2.8	3.7	405
30...	0800	203	5320	5.0	1800	1500	170	330	750	7.7	11	355
MAY												
19...	1215	156	657	12.0	270	82	50	36	39	1.0	1.5	233
JUN												
14...	1415	262	595	14.0	260	59	45	35	32	.9	1.5	241
JUL												
13...	1245	310	719	16.0	300	49	49	43	42	1.1	2.9	305
AUG												
18...	1300	214	703	13.5	310	57	50	46	37	.9	1.5	314
SEP												
08...	1130	167	678	12.0	320	67	52	45	35	.9	1.6	303

DATE	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED ORTHO-PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO-PHOSPHORUS (P) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT												
24...	500	14	.9	6.2	1050	1.43	383	4.4	.00	.01	0	20
NOV												
19...	400	14	1.1	6.6	941	1.28	112	5.2	.00	.02	20	30
DEC												
18...	360	12	1.0	8.6	898	1.22	145	5.0	.00	.00	50	20
JAN												
20...	630	19	.9	7.8	1210	1.65	193	8.3	.05	.05	20	40
FEB												
16...	700	23	1.1	7.4	1390	1.89	165	10	.01	.00	0	30
MAR												
16...	590	21	.9	7.1	1200	1.63	259	10	.02	.00	10	30
APR												
13...	630	21	1.0	3.8	1260	1.71	95.3	7.4	.02	.00	0	20
30...	2900	83	.8	4.9	4520	6.15	2480	22	.03	.00	80	10
MAY												
19...	150	5.3	.4	8.0	414	.56	174	1.9	.05	.06	30	30
JUN												
14...	110	4.4	.5	4.6	360	.49	255	1.7	.00	.00	240	10
JUL												
13...	130	5.1	.6	7.5	440	.60	368	2.1	.06	.04	40	10
AUG												
18...	120	4.0	.7	6.0	428	.58	247	1.8	.00	.01	10	10
SEP												
08...	130	6.1	.6	6.5	434	.59	196	1.7	.01	.02	190	10

06088300 MUDDY CREEK NEAR VAUGHN, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	863	1310	1280	1900	1860	1870	1670	3180	688	660	671	727
2	808	1290	1240	1720	1810	1770	1650	2670	693	677	627	718
3	858	1280	1430	1500	1880	1780	1700	2430	699	677	628	691
4	968	1260	3630	1340	2070	1720	1840	2200	700	641	660	660
5	966	1290	4050	1290	1930	1510	1850	2070	744	611	672	641
6	980	1260	2350	1330	1610	1340	1830	2920	706	638	638	704
7	1210	1250	1940	1290	1500	1460	1810	3280	669	652	828	691
8	1220	1420	1600	1280	1530	1290	1820	2520	590	665	688	679
9	1250	1340	1540	1250	1380	1370	1820	2160	609	699	666	673
10	1190	1430	1760	1190	1490	3470	1770	1970	591	721	650	681
11	1160	1320	1860	1180	1550	2510	1750	1690	575	718	638	647
12	1650	1410	1930	1210	1760	2720	1760	1750	544	708	599	619
13	1870	1240	1900	1240	1580	2110	1740	1630	616	736	604	656
14	2200	1400	1680	1210	1570	1990	1700	1620	616	692	638	662
15	2210	1320	1530	1210	1960	1760	1700	1570	629	658	655	664
16	1820	1270	1440	1220	1850	1630	1640	1070	588	641	655	646
17	1460	1280	1380	1280	1690	1780	1640	879	609	644	649	639
18	1350	1280	1370	2550	1700	2430	1650	738	611	681	662	647
19	1280	1360	1280	1910	1690	2200	1640	661	629	647	707	638
20	1220	1400	1290	1640	1600	2190	1620	659	557	639	731	639
21	1210	1370	1300	1600	1610	2080	1640	858	549	641	736	611
22	1280	1290	1320	1500	1520	1800	1630	920	644	583	732	663
23	1340	1190	1320	1550	1540	1770	1650	947	605	603	710	618
24	1500	1160	1330	1620	1760	1710	1620	771	608	718	683	680
25	1530	1230	1340	1700	1910	1690	1620	712	605	659	699	628
26	1560	1270	1330	1650	1960	1700	1750	779	600	611	691	601
27	1580	1380	1410	1380	2080	1520	2240	756	620	609	685	597
28	1600	1360	1540	1330	2030	1640	4000	611	629	609	687	664
29	1600	1290	1350	1880	2000	1700	5400	721	648	611	678	639
30	1480	1300	1490	2410	---	1680	5420	771	618	603	649	607
31	1420	---	1830	2070	---	1660	---	641	---	656	647	---
MONTH	1380	1310	1680	1530	1740	1870	2090	1490	628	657	673	654

YEAR MAX 6400 MIN 544 MEAN 1310

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.0	7.5	1.0	0.0	1.0	0.0	4.0	9.0	15.0	20.5	19.5	17.5
2	12.5	7.5	2.0	0.0	0.5	0.0	6.0	14.0	15.5	21.5	19.0	17.0
3	12.5	7.5	1.5	0.0	0.5	0.0	11.0	10.5	14.5	21.5	19.5	16.0
4	12.0	9.0	1.5	0.0	0.5	0.0	12.5	12.0	18.5	20.0	17.5	20.0
5	13.0	6.5	1.0	0.0	0.5	0.0	8.5	9.5	13.0	22.5	17.0	20.0
6	10.0	7.5	1.0	0.0	0.0	1.0	8.5	9.5	14.0	24.0	17.0	15.5
7	9.5	4.0	1.0	0.0	0.5	1.0	14.0	10.5	11.0	22.5	18.0	12.5
8	7.0	3.0	1.5	0.0	0.5	1.0	16.0	20.0	11.5	22.0	19.0	11.5
9	7.5	2.0	1.0	0.0	0.5	1.0	15.0	20.0	14.5	21.0	18.5	13.5
10	9.0	1.0	1.0	0.0	0.5	1.5	16.5	18.0	14.0	23.0	18.5	15.0
11	8.0	1.0	1.0	0.0	1.0	0.5	16.0	11.5	15.0	23.5	23.0	15.0
12	6.5	0.5	0.5	0.0	0.5	0.5	14.5	9.0	18.0	19.0	23.5	16.5
13	4.5	3.0	1.0	0.0	0.5	0.5	14.0	18.0	14.0	14.5	23.0	10.5
14	6.0	6.0	0.5	0.0	0.5	1.0	12.5	11.0	18.0	20.5	21.0	14.0
15	7.0	6.0	1.0	0.0	1.0	0.5	9.0	17.5	16.0	22.0	18.5	14.0
16	5.5	4.5	1.0	0.0	0.5	1.5	7.0	19.0	13.5	23.0	18.0	12.5
17	7.5	1.0	1.0	0.0	0.5	3.0	11.0	15.0	15.5	21.5	18.0	17.0
18	10.0	1.0	1.0	0.0	0.5	3.0	10.0	10.0	20.0	16.0	16.5	13.0
19	9.5	1.0	1.0	0.0	1.0	1.5	11.5	10.0	14.0	18.0	17.5	15.0
20	9.0	0.5	1.0	0.0	0.5	3.0	9.0	11.5	17.5	22.5	15.0	10.5
21	6.5	0.5	0.0	0.0	1.0	5.0	8.5	11.0	18.0	19.0	16.0	15.0
22	5.0	0.5	0.0	0.0	2.0	4.0	8.0	19.0	15.5	20.0	15.0	14.0
23	5.5	0.5	0.0	0.0	2.0	3.5	11.0	20.0	13.0	22.0	16.0	17.0
24	4.0	0.5	0.0	0.0	1.5	1.5	14.0	14.0	17.0	20.0	22.0	14.5
25	3.0	0.5	0.0	0.0	1.5	5.0	6.5	16.0	12.5	22.5	21.5	16.5
26	5.0	0.5	0.0	0.0	1.0	4.0	2.5	18.0	16.0	23.0	16.5	16.0
27	5.0	0.0	0.0	0.0	0.5	5.0	4.0	17.0	19.0	21.5	16.5	15.0
28	4.5	0.0	0.0	0.0	0.5	7.0	4.0	13.5	20.5	21.5	17.0	12.0
29	4.0	0.5	0.0	0.5	0.0	3.0	4.0	17.0	22.0	22.0	20.0	15.0
30	7.5	0.0	0.0	0.0	---	9.5	5.0	17.5	21.0	21.0	21.5	14.5
31	7.0	---	0.0	0.5	---	8.0	---	18.0	---	18.0	21.5	---
MONTH	7.5	3.0	0.5	0.0	0.5	2.5	10.0	14.5	16.0	21.0	18.5	15.0

YEAR MAX 24.0 MIN 0.0 MEAN 9.0

06088300 MUDDY CREEK NEAR VAUGHN, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	147	118	47	99	65	17	40	151	16
2	152	106	44	95	50	13	45	147	18
3	132	71	25	93	42	11	55	389	58
4	103	68	19	87	49	12	65	564	99
5	98	43	11	85	56	13	50	195	26
6	100	37	10	84	55	12	47	119	15
7	118	53	17	84	46	10	45	247	30
8	117	37	12	80	65	14	43	372	43
9	107	29	8.4	77	84	17	40	369	40
10	99	32	8.6	74	108	22	37	248	25
11	115	42	13	72	137	27	34	121	11
12	171	153	71	73	156	31	33	71	6.3
13	219	513	303	77	149	31	33	31	2.8
14	297	535	429	70	117	22	33	33	2.9
15	351	959	909	68	92	17	35	39	3.7
16	255	573	395	60	74	12	44	43	5.1
17	174	231	109	56	74	11	54	40	5.8
18	150	136	55	53	102	15	60	70	11
19	136	97	36	50	100	13	66	96	17
20	131	83	29	46	118	15	64	101	17
21	132	77	27	43	78	9.1	62	120	20
22	135	85	31	40	72	7.8	60	120	19
23	134	98	35	38	95	9.7	60	116	19
24	130	72	25	36	109	11	61	151	25
25	125	66	22	35	83	7.8	62	135	23
26	124	72	24	35	43	4.1	56	124	19
27	118	84	27	35	83	7.8	50	114	15
28	113	78	24	35	142	13	42	86	9.8
29	110	74	22	35	129	12	35	185	17
30	107	67	19	36	125	12	30	163	13
31	101	55	15	---	---	---	25	121	8.2
TOTAL	4501	---	2822.0	1851	---	429.3	1460	---	640.6
		JANUARY			FEBRUARY			MARCH	
1	23	102	6.3	50	297	40	28	106	8.0
2	20	148	8.0	40	86	9.3	28	72	5.4
3	19	138	7.1	30	81	6.6	26	45	3.4
4	18	113	5.5	26	84	5.9	30	55	4.5
5	19	67	3.4	27	72	5.2	35	37	3.5
6	20	61	3.3	30	81	6.6	50	94	13
7	21	48	2.7	35	66	6.2	80	135	29
8	22	64	3.8	40	99	11	100	120	32
9	25	84	5.7	45	119	14	120	276	89
10	30	69	5.6	47	61	7.7	120	832	270
11	32	62	5.4	50	67	9.0	120	337	109
12	37	41	4.1	51	75	10	110	54	16
13	45	53	6.4	52	161	23	100	102	28
14	55	49	7.3	50	106	14	110	145	43
15	65	64	11	46	60	7.5	120	173	56
16	75	165	33	44	52	6.2	72	263	51
17	80	323	70	40	46	5.0	67	450	81
18	80	713	154	38	56	5.7	60	520	93
19	70	228	43	35	113	11	46	376	47
20	59	119	19	34	136	12	36	296	29
21	58	166	26	34	152	14	39	314	33
22	58	134	21	34	171	16	39	210	22
23	58	101	16	35	146	14	37	201	20
24	56	133	20	38	349	36	41	146	16
25	50	123	17	40	437	47	38	142	15
26	45	102	12	38	282	29	38	142	15
27	44	143	17	32	126	11	38	108	11
28	46	94	12	30	162	13	34	136	12
29	48	164	21	29	166	13	33	124	11
30	50	164	22	---	---	---	32	72	6.2
31	52	175	25	---	---	---	31	73	6.1
TOTAL	1380	---	613.6	1120	---	408.9	1866	---	1178.1

06088300 MUDDY CREEK NEAR VAUGHN, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	32	51	4.4	127	1090	374	123	497	165
2	33	50	4.5	93	438	110	131	428	151
3	32	59	5.1	74	335	67	134	485	175
4	31	53	4.4	67	262	47	159	968	424
5	31	54	4.5	78	303	64	174	1130	531
6	31	56	4.7	85	309	71	230	1360	845
7	31	67	5.6	67	190	34	336	3080	2790
8	30	73	5.9	57	124	19	399	2580	2780
9	30	67	5.4	51	114	16	339	1450	1330
10	30	84	6.6	48	158	20	306	1140	942
11	30	74	6.0	45	123	15	306	910	752
12	29	78	6.1	44	80	9.5	278	660	510
13	29	67	5.2	42	117	13	220	550	327
14	29	56	4.4	43	150	17	246	526	349
15	28	57	4.3	55	167	25	206	428	240
16	30	75	6.1	88	423	101	246	505	335
17	30	100	8.1	91	656	161	249	517	348
18	28	64	6.4	119	804	258	229	414	256
19	28	74	5.6	144	988	384	217	368	216
20	28	66	6.5	135	768	280	247	423	282
21	28	60	6.0	112	499	151	303	564	461
22	29	70	5.5	78	266	56	250	524	362
23	29	76	6.0	76	255	52	311	655	550
24	28	64	6.4	99	521	139	280	626	473
25	32	97	8.4	121	581	190	286	590	459
26	31	142	12	131	610	216	302	600	489
27	35	175	17	110	637	189	281	827	627
28	66	794	141	169	969	442	267	770	555
29	127	1490	511	123	627	208	259	886	620
30	171	2760	1270	114	534	164	263	526	374
31	---	---	---	169	692	316	---	---	---
TOTAL	1176	---	2093.3	2855	---	4208.5	7587	---	18718
		JULY			AUGUST			SEPTEMBER	
1	218	356	210	266	259	186	152	89	37
2	192	293	152	394	596	634	152	107	44
3	194	354	185	418	831	938	142	98	38
4	219	363	215	491	960	1270	153	83	34
5	260	381	267	569	1340	2060	161	67	29
6	223	315	190	526	1270	1800	174	93	44
7	219	283	167	462	850	1060	169	76	35
8	201	298	162	399	729	785	162	87	38
9	188	321	163	352	590	561	162	100	44
10	177	242	116	343	413	382	166	93	42
11	173	211	99	320	392	339	167	81	37
12	280	944	714	320	359	310	172	83	39
13	322	571	496	307	331	274	169	91	42
14	276	440	328	262	287	203	163	72	32
15	271	415	304	243	275	180	164	125	55
16	300	463	375	226	194	118	176	110	52
17	296	440	352	213	180	104	164	93	41
18	276	375	281	202	139	76	183	123	61
19	351	478	453	186	205	103	183	105	52
20	302	347	283	170	175	80	182	100	49
21	295	337	268	161	156	68	177	118	56
22	360	447	434	164	156	69	155	96	40
23	342	390	360	180	167	81	164	83	37
24	276	328	244	180	148	72	143	60	23
25	307	411	341	166	123	55	173	83	39
26	357	486	468	180	138	67	189	105	54
27	308	342	284	167	122	55	186	82	42
28	326	492	433	161	87	38	157	91	39
29	321	312	270	167	106	46	169	85	39
30	321	282	244	164	89	39	176	87	41
31	271	213	156	164	85	38	---	---	---
TOTAL	8424	---	9014	8523	---	12093	5007	---	1255
YEAR	45756.0		53474.3						

06088300 MUDDY CREEK NEAR VAUGHN, MT--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM
MAR											
16...	1340	1.0	68	719	132	47	72	97	99	100	--
MAY											
19...	1410	12.0	139	1090	409	45	62	96	99	100	--
JUN											
14...	1350	14.0	266	591	424	30	47	72	87	96	100

06088500 MUDDY CREEK AT VAUGHN, MT

LOCATION.--Lat 47°33'42", long 111°32'33", near center of S½NE¼ sec.24, T.21 N., R.1 E., Cascade County, Hydrologic Unit 10030104, on right bank about 30 ft (9.1 m) upstream from old highway bridge at Vaughn, 1.5 mi (2.4 km) upstream from mouth.

DRAINAGE AREA.--314 mi^2 (813 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1925 to February 1926, April 1934 to September 1968, July 1971 to current year.

REVISED RECORDS.--WSP 856: 1937. WSP 1509: 1934-35, 1941(M). WSP 1559: 1956. WSP 1629: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 3,350 ft (1.021 m), from topographic map. May 21, 1925, to Feb. 8, 1926, nonrecording gage at site 500 ft (152 m) downstream at different datum. Apr. 19, 1934, to Sept. 30, 1955, at present site at datum 1.00 ft (0.305 m) higher. May 18, 1955, to Apr. 25, 1960, and Sept. 24, 1962, to Sept. 30, 1968, auxiliary crest-stage gage. Oct. 1, 1955, to Sept 30, 1968, nonrecording gage at bridge 30 ft (9.1 m) downstream at present datum.

REMARKS.--Water-discharge records good except those for winter period, which are poor. Natural flow increased by wastage from Sun River Canal and by return flow from irrigation. Diversions for irrigation of about 700 acres (2.83 km^2) above station. Pumped diversions from Muddy Creek above station in SW¼ sec. 2, T.22 N., R.1 W., to supplement water supply for Benton Lake Wildlife Refuge are listed below.

AVERAGE DISCHARGE.--39 years (1934-68, 1971-76), 125 ft^3/s (3.540 m^3/s), 90,560 acre-ft/yr (112 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,600 ft^3/s (215 m^3/s) June 4, 1953, gage height, 17.7 ft, (5.40 m), present datum, from floodmarks, from rating curve extended above 3,000 ft^3/s (85.0 m^3/s) on basis of slope-area measurement of peak flow; minimum, 2.0 ft^3/s (0.057 m^3/s) Mar. 16, 17, 1972, gage height, 1.20 ft (0.366 m), result of ice jams upstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1908 reached a stage of about 24 ft (7.3 m), present datum (discharge not determined); flood in June 1932 reached a stage of about 19 ft (5.8 m), present datum (discharge not determined); from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 798 ft^3/s (22.6 m^3/s) Aug. 6, gage height, 5.61 ft (1.710 m); minimum daily, 20 ft^3/s (0.566 m^3/s) Jan. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	166	106	45	26	54	30	34	135	195	314	348	223
2	176	102	50	24	50	30	36	98	188	251	464	228
3	162	100	60	22	40	30	37	77	188	230	509	212
4	130	97	70	20	28	35	36	67	255	259	557	214
5	118	93	55	21	28	40	34	78	291	303	628	226
6	113	93	50	21	35	60	35	89	346	269	636	234
7	138	91	50	23	40	100	34	71	438	259	554	235
8	136	90	50	25	45	130	34	60	512	247	510	233
9	132	89	45	28	48	130	33	53	490	217	472	236
10	120	94	40	32	50	120	33	50	439	220	449	231
11	127	89	37	35	52	110	32	47	435	224	428	233
12	206	83	35	40	54	105	31	46	411	341	411	240
13	258	103	35	50	56	105	30	45	338	439	405	234
14	330	90	36	60	54	110	29	44	350	359	359	230
15	399	85	38	74	52	110	29	46	304	326	327	219
16	313	81	53	80	48	110	30	106	331	354	312	229
17	208	78	60	85	46	105	32	94	354	373	295	227
18	170	78	70	85	40	97	30	131	318	348	287	257
19	151	66	70	80	38	58	30	166	297	425	271	263
20	141	60	68	75	36	38	29	162	314	390	250	258
21	138	50	66	70	36	38	30	144	397	360	239	241
22	144	45	64	68	36	39	31	113	336	410	234	225
23	137	43	62	66	38	30	32	98	408	407	258	228
24	134	41	62	62	41	26	31	121	371	351	274	218
25	127	40	66	56	43	38	34	134	369	356	253	244
26	126	38	65	50	42	39	43	224	397	438	257	277
27	123	37	55	48	40	42	41	178	380	398	244	274
28	118	37	50	49	38	37	63	235	371	403	232	228
29	115	38	45	50	34	36	114	207	339	391	237	241
30	113	40	35	52	---	34	171	172	371	405	233	247
31	107	---	30	54	---	36	---	241	---	369	231	---
TOTAL	5076	2177	1617	1531	1242	2048	1238	3532	10533	10436	11164	7085
MEAN	164	72.6	52.2	49.4	42.8	66.1	41.3	114	351	337	360	236
MAX	399	106	70	85	56	130	171	241	512	439	636	277
MIN	107	37	30	20	28	26	29	44	188	217	231	212
AC-FT	10070	4320	3210	3040	2460	4060	2460	7010	20890	20700	22140	14050
(†)	0	0	0	0	0	0	0	0	1,300	1,640	40	0

CAL YR 1975 TOTAL 69131 MEAN 189 MAX 2540 MIN 17 AC-FT 137100 (†) 1,980
WTR YR 1976 TOTAL 57679 MEAN 158 MAX 636 MIN 20 AC-FT 114400 (†) 1,980

† Diversions, in acre-feet, to Benton Lake, furnished by Fish and Wildlife Service.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968, 1971 to current year.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to September 1968, July 1972 to current year.
WATER TEMPERATURES: October 1967 to September 1968, July 1971 to current year.
SUSPENDED SEDIMENT DISCHARGE: July 1971 to current year.
INSTRUMENTATION.--Temperature recorder October 1971 to September 1972.
REMARKS.--Flow affected by ice during most of winter months. Natural flow increased by wastage from Sun River Canal and by return flow from irrigation.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 5,400 micromhos Apr. 30, 1976; minimum daily, 470 micromhos June 8, 1974.
WATER TEMPERATURES: Maximum daily, 25.5°C June 18, 1974; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily, 9,870 mg/L Apr. 27, 1975; minimum daily observed, 11 mg/L Oct. 19, 1968, Oct. 19, 1972, Oct. 30, 1973.
SEDIMENT LOADS: Maximum daily, 48,000 tons (43,500 tonnes) May 7, 1975; minimum daily, 0.84 ton (0.76 tonne) Jan. 8, 1973.
EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 5,400 micromhos April 30; minimum daily, 519 micromhos June 12, 21.
WATER TEMPERATURES: Maximum daily, 22.0°C July 6, 16; minimum daily, 0.0°C on many days during November to March.
SEDIMENT CONCENTRATIONS: Maximum daily, 6,220 mg/L June 9; minimum daily, 46 mg/L Mar. 3.
SEDIMENT LOADS: Maximum daily, 8,230 tons (7,470 tonnes) June 9; minimum daily, 3.7 tons (3.4 tonnes) Mar. 3.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE (DEG C)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
OCT												
22...	1615	140	1310	5.0	520	190	74	81	100	1.9	3.0	397
NOV												
17...	1400	69	1370	2.5	550	230	79	86	110	2.0	2.6	386
DEC												
16...	1615	51	1610	.0	640	260	97	97	130	2.2	3.2	467
JAN												
22...	1240	75	1680	.0	620	320	85	100	150	2.6	4.8	365
FEB												
18...	1230	24	1870	.0	680	340	90	110	160	2.7	3.2	415
MAR												
18...	0915	111	1540	1.0	680	440	91	110	190	3.2	4.2	297
APR												
15...	0900	28	1810	8.5	670	360	88	110	170	2.9	3.7	384
MAY												
21...	1020	151	958	11.5	400	180	70	54	68	1.5	2.1	268
JUN												
16...	1210	332	580	12.0	250	55	47	32	32	.9	1.5	237
JUL												
13...	1440	410	737	17.5	300	70	54	41	44	1.1	3.1	285
AUG												
20...	0820	249	719	15.5	320	87	53	46	40	1.0	1.7	286
SEP												
08...	1600	237	686	13.5	310	75	52	43	37	.9	1.6	283

06088500 MUDDY CREEK AT VAUGHN, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	D15-SOLVED SULFATE (SO4) (MG/L)	O15-SOLVED CHLORIDE (CL) (MG/L)	O15-SOLVED FLUORIDE (F) (MG/L)	O15-SOLVED SILICA (SIO2) (MG/L)	O15-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	O15-SOLVED SOLIDS (TONS PER AC-FT)	O15-SOLVED SOLIDS (TONS PER DAY)	D15-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	O15-SOLVED PHOSPHORUS (P) (MG/L)	O15-SOLVED ORTHO. PHOSPHORUS (P) (MG/L)	O15-SOLVED IRON (FE) (UG/L)	D15-SOLVED MANGANESE (MN) (UG/L)
OCT												
22...	370	13	.9	6.1	864	1.18	327	4.5	.01	.02	10	5
NOV												
17...	430	14	1.0	5.0	938	1.28	175	4.6	.00	.00	0	10
DEC												
16...	450	14	1.0	8.8	1050	1.43	145	5.3	.00	.00	20	0
JAN												
22...	600	19	.9	7.7	1180	1.60	239	7.1	.04	.02	0	10
FEB												
18...	640	20	1.0	7.1	1270	1.73	82.3	8.3	.02	.00	10	0
MAR												
18...	740	21	.8	5.3	1340	1.82	402	8.0	.02	.00	20	20
APR												
15...	650	22	.9	3.1	1270	1.73	96.0	6.5	.00	.01	10	10
MAY												
21...	300	8.7	.6	5.3	651	.89	265	2.4	.02	.00	20	10
JUN												
16...	110	4.0	.4	4.3	353	.48	316	1.2	.02	.00	40	10
JUL												
13...	160	5.3	.5	7.0	464	.63	514	1.9	.05	.03	40	10
AUG												
20...	150	4.6	.6	6.0	450	.61	303	1.5	.00	.00	20	0
SEP												
08...	140	4.0	.6	6.3	431	.59	276	1.6	.01	.01	20	0

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	919	1410	1350	1930	1970	2010	1680	3900	669	643	711	710
2	850	1360	1320	2000	2000	2060	1660	3210	720	658	669	696
3	869	1360	1350	1800	1920	2000	1720	2590	691	679	655	700
4	932	1320	1980	1520	1980	1950	1780	2340	706	636	677	723
5	968	1320	3810	1420	2170	1970	1900	2200	659	619	721	652
6	1030	1290	2500	1410	2020	1630	1870	2400	649	652	696	687
7	1120	1310	2090	1420	1620	1380	1850	3540	711	652	672	718
8	1260	1490	1740	1390	1620	1670	1850	2890	605	700	743	669
9	1280	1400	1600	1340	1650	1430	1850	2470	585	711	700	681
10	1260	1340	1720	1290	1480	2150	1840	2180	554	718	681	679
11	1180	1420	1790	1230	1560	3400	1800	1980	539	702	689	668
12	1540	1290	2030	1230	1550	2500	1800	1790	519	715	682	660
13	1920	1340	2010	1270	1590	2340	1800	1770	550	779	662	643
14	2010	1360	1900	1330	1560	2150	1770	1710	553	691	689	656
15	2080	1440	1710	1250	1770	2050	1750	1670	579	684	712	681
16	2040	1380	1550	1240	2070	1760	1710	860	571	641	758	641
17	1600	1350	1530	1480	1950	1520	1680	1140	575	668	729	664
18	1410	1300	1410	2960	1810	1850	1890	1210	586	671	708	651
19	1340	1310	1400	2330	1850	2350	1700	758	606	643	750	668
20	1290	1340	1340	1870	1810	2260	1700	750	579	650	726	658
21	1250	1370	1340	1650	1640	2080	1660	929	519	661	750	639
22	1300	1290	1410	1610	1500	1940	1660	878	599	627	741	669
23	1370	1280	1380	1560	1510	1890	1640	1010	588	631	731	662
24	1410	1230	1380	1620	1500	1800	1670	940	618	705	771	671
25	1520	1240	1390	1660	1640	1630	1630	811	618	696	761	668
26	1580	1240	1400	1710	1840	1620	1750	601	590	618	750	652
27	1610	1320	1420	1600	1850	1560	1960	748	611	656	739	638
28	1620	1500	1580	1520	2120	1560	2530	609	601	633	749	669
29	1600	1430	1560	1580	2200	1710	4820	650	633	629	731	663
30	1570	1370	1430	2100	---	1760	5400	727	598	628	726	652
31	1490	---	1750	1920	---	1740	---	632	---	670	721	---
MONTH	1390	1350	1680	1620	1780	1930	2000	1610	605	667	716	670

YEAR MAX 5400 MIN 519 MEAN 1330

06088500 MUDDY CREEK AT VAUGHN, MT--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.5	8.0	0.5	0.0	1.0	0.0	4.0	10.0	16.5	20.0	19.5	18.5
2	13.5	7.0	0.5	0.0	1.0	0.0	9.5	15.0	17.0	19.5	20.0	18.5
3	13.5	8.0	0.5	0.0	0.0	0.0	12.5	14.0	14.0	21.0	19.5	17.0
4	13.0	10.0	0.5	0.0	0.5	0.0	13.5	13.0	16.0	19.5	18.0	19.0
5	14.0	7.5	0.5	0.0	0.5	0.0	11.0	10.0	16.0	21.0	18.0	18.5
6	11.5	8.0	0.5	0.0	1.0	1.5	10.5	11.0	14.0	22.0	18.0	15.5
7	10.5	4.5	1.0	0.0	1.0	1.0	16.5	12.0	11.5	21.5	19.0	12.0
8	8.0	4.0	1.5	0.0	2.0	1.5	18.5	21.5	11.5	21.0	18.0	12.5
9	8.0	2.0	1.5	0.0	0.5	1.0	17.0	22.0	15.0	20.5	17.5	14.0
10	9.5	0.5	1.0	0.0	0.5	1.5	18.0	20.5	16.0	21.0	17.5	15.0
11	8.0	0.5	0.5	0.0	1.0	0.5	17.5	12.5	15.0	21.0	20.0	15.0
12	6.5	0.5	0.5	0.0	0.5	0.5	17.0	11.0	16.0	19.0	20.5	15.5
13	5.0	2.5	0.5	0.0	1.0	0.5	16.0	20.0	13.0	16.0	20.0	13.0
14	6.5	5.5	0.5	0.0	1.0	1.0	15.0	12.5	15.5	19.0	20.0	14.5
15	7.5	6.5	0.5	0.0	1.0	0.5	10.5	18.5	14.5	20.5	18.5	15.0
16	6.0	4.0	0.5	0.0	1.0	2.0	7.0	18.0	12.5	22.0	17.5	14.0
17	8.0	1.0	0.5	0.0	1.0	2.0	11.0	15.5	14.0	21.0	17.5	17.5
18	11.0	1.0	0.5	0.0	1.0	1.5	12.0	12.0	17.5	18.5	16.0	13.5
19	10.0	0.5	0.5	0.0	1.0	1.0	11.5	12.0	16.0	17.5	17.5	13.0
20	7.0	0.5	0.5	0.0	0.5	2.0	12.0	13.0	17.0	20.5	16.0	11.5
21	7.0	0.5	0.0	0.0	1.0	5.0	12.0	13.0	18.0	19.0	16.5	15.0
22	5.0	0.5	0.0	0.0	1.5	6.0	9.5	16.5	15.0	19.0	17.0	15.0
23	5.5	0.5	0.0	0.0	2.0	4.5	13.5	19.0	12.0	20.5	19.0	15.5
24	4.0	1.0	0.0	0.0	1.0	2.5	15.0	17.0	15.0	19.5	20.5	16.0
25	3.0	0.5	0.0	0.0	1.0	5.5	7.0	17.0	12.0	21.0	20.5	15.5
26	5.0	0.5	0.0	0.0	0.5	5.0	3.5	16.0	14.0	21.5	15.5	15.0
27	5.0	0.5	0.0	0.0	0.0	5.0	5.0	18.0	17.0	20.0	15.0	14.0
28	4.0	0.0	0.0	0.0	0.0	7.0	4.0	14.0	18.5	19.5	15.5	13.0
29	4.5	0.0	0.0	1.5	0.0	4.0	7.0	16.5	20.5	20.5	18.5	15.5
30	7.5	0.5	0.0	0.5	---	11.0	6.5	16.5	21.0	20.0	20.5	15.0
31	7.0	---	0.0	1.5	---	10.0	---	16.5	---	20.0	20.5	---
MONTH	8.0	3.0	0.5	0.0	1.0	2.5	11.5	15.5	15.5	20.0	18.5	15.0
YEAR	MAX	22.0	MIN	0.0	MEAN	9.0						

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM
MAR											
18...	1105	1.0	97	1270	333	53	77	94	96	99	100
MAY											
21...	1000	11.5	145	1420	556	49	59	85	96	100	--
JUN											
16...	1130	12.0	325	1370	1200	13	29	70	89	99	100

06088500 MUDDY CREEK AT VAUGHN, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	166	352	158	106	254	73	45	137	17
2	176	564	268	102	280	77	50	168	25
3	162	476	208	100	258	70	60	430	70
4	130	332	117	97	243	64	70	552	104
5	118	264	84	93	237	60	55	334	50
6	113	216	66	93	166	42	50	158	21
7	138	420	156	91	193	47	50	232	31
8	136	332	122	90	182	44	50	340	46
9	132	280	100	89	224	54	45	364	44
10	120	225	73	94	423	107	40	278	30
11	127	196	67	89	438	105	37	134	13
12	206	648	360	83	396	89	35	90	8.5
13	258	1590	1110	103	509	142	35	114	11
14	330	1440	1280	90	315	77	36	98	9.5
15	399	2110	2270	85	225	52	38	92	9.4
16	313	1210	1020	81	216	47	53	120	17
17	208	628	353	78	270	57	60	158	26
18	170	437	201	78	371	78	70	142	27
19	151	506	206	66	403	72	70	99	19
20	141	397	151	60	249	40	68	97	18
21	138	279	104	50	96	13	66	108	19
22	144	369	143	45	102	12	64	116	20
23	137	420	155	43	119	14	62	160	27
24	134	373	135	41	119	13	62	223	37
25	127	342	117	40	135	15	66	219	39
26	126	275	94	38	105	11	65	176	31
27	123	237	79	37	131	13	55	174	26
28	118	236	75	37	103	10	50	196	26
29	115	275	85	38	70	7.2	45	235	29
30	113	334	102	40	132	14	35	194	18
31	107	260	75	---	---	---	30	198	16
TOTAL	5076	---	9534	2177	---	1519.2	1617	---	884.4
		JANUARY			FEBRUARY			MARCH	
1	26	118	8.3	54	148	22	30	163	13
2	24	102	6.6	50	249	34	30	107	8.7
3	22	80	4.8	40	178	19	30	46	3.7
4	20	112	6.0	28	150	11	35	131	12
5	21	103	5.8	28	124	9.4	40	114	12
6	21	111	6.3	35	111	10	60	163	26
7	23	100	6.2	40	153	17	100	228	62
8	25	116	7.8	45	210	26	130	150	53
9	28	133	10	48	162	21	130	265	93
10	32	87	7.5	50	113	15	120	727	236
11	35	72	6.8	52	140	20	110	298	89
12	40	100	11	54	172	25	105	117	33
13	50	212	29	56	176	27	105	156	44
14	60	304	49	54	186	27	110	316	94
15	74	375	75	52	202	28	110	261	78
16	80	229	49	48	164	21	110	430	128
17	85	270	62	46	133	17	105	1100	312
18	85	505	116	40	182	20	97	1100	288
19	80	274	59	38	209	21	58	1570	246
20	75	116	23	36	225	22	38	766	79
21	70	96	18	36	237	23	38	502	52
22	68	90	17	36	208	20	39	431	45
23	66	89	16	38	179	18	30	391	32
24	62	83	14	41	286	32	26	270	19
25	56	146	22	43	250	29	38	309	32
26	50	137	18	42	177	20	39	287	30
27	48	198	26	40	169	18	42	227	26
28	49	178	24	38	260	27	37	228	23
29	50	248	33	34	228	21	36	225	22
30	52	153	21	---	---	---	34	204	19
31	54	122	18	---	---	---	36	169	16
TOTAL	1531	---	776.1	1242	---	620.4	2048	---	2226.4

06088500 MUDDY CREEK AT VAUGHN, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	34	125	11	135	2600	948	195	1330	700
2	36	125	12	98	1530	405	188	853	433
3	37	139	14	77	1870	389	188	1050	533
4	36	106	10	67	1710	309	255	1370	943
5	34	80	7.3	78	672	142	291	1480	1160
6	35	82	7.7	89	727	175	346	1810	1690
7	34	108	9.9	71	736	141	438	3180	3760
8	34	141	13	60	339	55	512	3680	5090
9	33	123	11	53	239	34	490	6220	8230
10	33	112	10	50	201	27	439	3080	3650
11	32	119	10	47	269	34	435	2080	2440
12	31	111	9.3	46	253	31	411	1970	2190
13	30	101	8.2	45	176	21	338	1770	1620
14	29	120	9.4	44	177	21	350	1550	1460
15	29	90	7.0	46	159	20	304	1770	1450
16	30	141	11	106	1200	343	331	1980	1770
17	32	182	16	94	1820	462	354	1720	1640
18	30	154	12	131	1860	658	318	1420	1220
19	30	141	11	166	2290	1030	297	1400	1120
20	29	172	13	162	2090	914	314	1300	1100
21	30	152	12	144	1430	556	397	1660	1780
22	31	91	7.6	113	879	268	336	1710	1550
23	32	110	9.5	98	672	178	408	1720	1890
24	31	109	9.1	121	825	270	371	1610	1610
25	34	134	12	134	1370	496	369	1350	1350
26	43	285	33	224	1950	1180	397	1550	1660
27	41	477	53	178	1440	692	380	1650	1690
28	63	901	153	235	1640	1040	371	1200	1200
29	114	3020	930	207	1380	771	339	1050	961
30	171	4170	1930	172	820	381	371	1350	1350
31	---	---	---	241	1470	957	---	---	---
TOTAL	1238	---	3362.0	3532	---	12948	10533	---	57240
		JULY			AUGUST			SEPTEMBER	
1	314	1460	1240	348	658	618	223	497	299
2	251	1020	691	464	1120	1400	228	651	401
3	230	1020	633	509	1510	2080	212	588	337
4	259	1120	783	557	1560	2350	214	518	299
5	303	1220	998	628	2610	4430	226	483	295
6	269	900	654	636	2770	4760	234	508	321
7	259	749	524	554	1930	2890	235	438	278
8	247	778	519	510	1540	2120	233	546	343
9	217	792	464	472	1440	1840	236	574	366
10	220	756	449	449	1350	1640	231	406	253
11	224	720	435	428	1280	1480	233	420	264
12	341	806	742	411	980	1090	240	508	329
13	439	1160	1370	405	910	995	234	357	226
14	359	1020	989	359	896	868	230	343	213
15	326	907	798	327	714	630	219	301	178
16	354	958	916	312	749	631	229	406	251
17	373	965	972	295	728	580	227	336	206
18	348	886	832	287	644	499	257	385	267
19	425	1380	1580	271	651	476	263	546	388
20	390	1240	1310	250	742	501	258	469	327
21	360	1030	1000	239	651	420	241	406	264
22	410	1200	1330	234	637	402	225	301	183
23	407	1120	1230	258	700	488	228	301	185
24	351	914	866	274	784	580	218	399	235
25	356	907	872	253	728	497	244	399	263
26	438	1130	1340	257	602	418	277	438	328
27	398	1000	1070	244	546	360	274	385	285
28	403	1020	1110	232	469	294	228	287	177
29	391	922	973	237	483	309	241	266	173
30	405	1000	1090	233	413	260	247	305	203
31	369	763	760	231	476	297	---	---	---
TOTAL	10436	---	28540	11164	---	36203	7085	---	8137
YEAR	57679.0		161990.5						

06089000 SUN RIVER NEAR VAUGHN, MT

LOCATION.--Lat 47°31'37", long 111°29'05", in NW¼SE¼SW¼ sec.33, T.21 N., R.2 E., Cascade County, Hydrologic Unit 10030104, on right bank 3.7 mi (6.0 km) downstream from Muddy Creek, 3.6 mi (5.8 km) southeast of Vaughn, and at mile 14.6 (23.5 km).

DRAINAGE AREA.--1,854 mi^2 (4,802 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July to October 1897 (gage heights and discharge measurements only, published as "near Great Falls"), April 1934 to current year. Monthly discharge only for April 1934, published in WSP 1309.

REVISED RECORDS.--WSP 786: 1934. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,317.12 ft (1,011.058 m) above mean sea level. July 11 to Oct. 30, 1897, nonrecording gage at site 0.8 mi (1.3 km) upstream at different datum. Apr. 19 to Aug. 3, 1934, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records fair except those for winter period, which are poor. Flow regulated by Gibson, Pishkun, Willow Creek, and Nilan Reservoirs (see p.579-580). Diversions for irrigation of about 110,000 acres (445 km^2) above station.

AVERAGE DISCHARGE.--42 years, 746 ft^3/s (21.13 m^3/s), 540,500 acre-ft/yr (666 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,500 ft^3/s (1,520 m^3/s) June 9, 1964, 42,200 ft^3/s (1,200 m^3/s) in main channel, plus 11,300 ft^3/s (320 m^3/s) in bypass channel, gage height, 23.4 ft (7.13 m), from floodmark; minimum, 20 ft^3/s (0.566 m^3/s) Apr. 24, 1944.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1964 exceeded the stage of the June 1908 flood by about 3 ft (0.9 m) and is the highest since 1908, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,850 ft^3/s (251 m^3/s) May 15, gage height, 11.41 ft (3.478 m); minimum daily, 150 ft^3/s (4.25 m^3/s) Feb. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	405	822	700	400	540	200	382	2170	2810	893	642	575
2	429	819	900	350	540	250	401	2210	2690	1150	798	575
3	408	805	1100	300	500	300	401	2220	2480	1580	862	540
4	375	806	1000	250	450	340	388	2440	2470	1360	938	526
5	354	798	900	230	400	400	388	3650	2430	931	1010	540
6	358	791	800	210	380	500	382	4340	2370	879	1010	561
7	437	777	900	190	400	650	388	4420	2680	850	969	582
8	461	780	1000	170	410	700	394	4070	2910	784	980	561
9	444	836	1100	170	430	600	382	4020	3060	833	942	568
10	450	843	913	180	450	550	369	4180	4180	740	902	589
11	489	850	784	180	500	500	357	4170	4820	695	885	596
12	769	847	760	190	540	460	351	4270	4770	721	896	589
13	864	865	720	200	600	500	357	4660	3840	939	827	572
14	1140	858	660	220	640	540	344	5330	3090	826	748	561
15	1110	843	620	250	700	600	344	7880	2480	708	696	547
16	904	829	580	300	720	700	761	7850	2190	678	687	547
17	748	826	550	400	720	603	1160	6180	1970	651	656	533
18	649	806	500	450	700	582	1250	5680	1640	572	645	582
19	705	772	540	500	660	554	1260	5680	1390	677	615	674
20	814	760	580	520	620	466	1220	5080	1270	695	576	631
21	828	760	620	520	600	420	1180	4700	1140	691	568	617
22	895	750	700	500	620	427	1260	4220	1120	691	554	589
23	922	740	740	480	620	407	1390	4060	1220	676	575	568
24	904	720	760	420	500	407	1490	4190	1130	611	638	533
25	856	700	740	400	400	407	1560	4670	1040	615	631	589
26	850	680	700	410	300	382	1660	4750	1070	712	603	645
27	848	660	660	430	250	388	1810	3760	1060	618	582	624
28	835	630	600	460	200	394	1960	3290	1020	584	576	575
29	791	600	540	480	150	382	1940	3810	934	589	595	568
30	753	580	500	490	---	376	2100	3380	906	618	596	561
31	832	---	450	520	---	376	---	2990	---	637	589	---
TOTAL	21627	23153	22617	10770	14540	14361	27629	134320	66180	24204	22791	17318
MEAN	698	772	730	347	501	463	921	4333	2206	781	735	577
MAX	1140	865	1100	520	720	700	2100	7880	4820	1580	1010	674
MIN	354	580	450	170	150	200	344	2170	906	572	554	526
AC-FT	42900	45920	44860	21360	28840	28490	54800	266400	131300	48010	45210	34350

CAL YR 1975 TOTAL 503338 MEAN 1379 MAX 24500 MIN 160 AC-FT 998400
WTR YR 1976 TOTAL 399510 MEAN 1092 MAX 7880 MIN 150 AC-FT 792400

06089000 SUN RIVER NEAR VAUGHN, MT--Continued

WATER-QUALITY RECORDS

LOCATION.--Samples collected at county bridge 1.8 mi (2.9 km) downstream from gaging station, 4.4 mi (7.1 km) southeast of Vaughn, 5.5 mi (8.8 km) downstream from Muddy Creek, and 7.5 mi (12.1 km) northwest of Great Falls.

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to current year.
WATER TEMPERATURES: October 1968 to current year.

REMARKS.--Flow regulated by reservoirs and diversions for irrigation upstream from station. Interruptions in the temperature record Oct. 1 to Nov. 11 due to broken thermometer, Mar. 7 to 15 due to ice cover.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,720 micromhos May 1, 1970; minimum daily, 214 micromhos June 8, 1970.
WATER TEMPERATURES: Maximum daily, 28.0°C Aug. 11, 27, 1969; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,530 micromhos Oct. 18; minimum daily, 278 micromhos May 29.
WATER TEMPERATURES: Maximum daily, 21.0°C July 7, 14, 17; minimum daily, 0.0°C on many days during November to March.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE (DEG C)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
OCT												
24...	0855	917	540	3.0	360	130	66	48	64	1.5	2.3	279
NOV												
17...	1055	827	663	3.0	290	82	60	33	33	.9	1.6	248
DEC												
16...	1050	530	793	.0	330	98	73	37	42	1.0	1.8	289
JAN												
21...	1540	520	813	.5	310	100	62	38	52	1.3	2.2	254
FEB												
16...	1640	720	790	.0	320	110	62	39	42	1.0	1.7	252
MAR												
16...	1530	700	851	4.0	330	120	65	41	57	1.4	2.1	256
APR												
13...	1530	376	700	15.5	310	110	64	37	43	1.1	1.9	241
MAY												
19...	1630	5630	305	11.5	140	11	38	12	6.8	.2	.9	163
JUN												
14...	1615	2990	333	12.5	150	24	36	15	11	.4	1.0	156
JUL												
13...	1540	917	762	19.5	310	100	59	40	47	1.2	2.8	253
AUG												
18...	1600	653	650	16.5	300	83	61	37	34	.8	1.7	270
SEP												
09...	1640	554	600	16.0	290	98	55	36	34	.9	1.9	229

DATE	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT												
24...	260	7.3	.4	5.1	594	.81	1470	.78	.01	.01	0	10
NOV												
17...	150	3.9	.4	4.1	411	.56	918	.64	.00	.00	0	0
DEC												
16...	170	3.8	.4	6.2	481	.65	688	1.0	.00	.00	10	0
JAN												
21...	210	5.6	.5	5.4	508	.69	713	1.5	.00	.01	10	0
FEB												
16...	200	4.8	.4	5.1	485	.66	943	1.4	.00	.00	0	0
MAR												
16...	230	5.8	.4	5.7	541	.74	1020	1.7	.01	.00	0	10
APR												
13...	200	4.1	.4	4.1	477	.65	484	.85	.01	.00	0	0
MAY												
19...	26	.9	.2	5.0	171	.23	2600	.07	.01	.00	20	20
JUN												
14...	49	1.2	.2	4.5	196	.27	1580	.19	.00	.00	10	10
JUL												
13...	200	4.9	.4	5.9	489	.67	1210	.98	.02	.01	70	10
AUG												
18...	130	3.1	.5	4.9	409	.56	721	.76	.00	.01	10	10
SEP												
09...	140	3.2	.4	4.1	391	.53	585	.72	.01	.01	90	10

06089000 SUN RIVER NEAR VAUGHN, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	827	754	814	---	---	1000	746	869	319	554	---	629
2	857	---	715	801	771	1010	737	---	318	557	671	635
3	871	700	709	909	819	1010	760	578	324	386	655	630
4	1040	696	900	---	989	1100	---	526	347	---	639	629
5	---	691	1060	920	721	1110	801	464	382	---	708	---
6	869	691	990	799	719	1120	771	528	---	539	720	---
7	829	684	---	747	699	---	770	507	403	562	681	662
8	851	683	720	757	---	1100	751	394	378	569	---	647
9	1040	---	686	751	1020	1100	748	---	356	521	662	637
10	848	624	765	760	711	1100	749	390	304	571	649	629
11	1080	633	715	---	698	1110	---	378	290	---	642	626
12	---	627	656	842	782	1110	750	366	289	601	628	---
13	---	655	752	839	738	952	741	347	---	638	619	621
14	1170	647	---	831	780	---	723	328	319	640	632	615
15	794	669	772	854	---	849	720	317	335	631	---	615
16	787	---	770	830	779	838	656	---	349	631	654	616
17	912	636	778	863	737	822	472	305	374	636	641	620
18	1530	607	789	---	736	878	---	302	468	---	638	643
19	---	641	795	836	768	909	436	300	471	680	655	---
20	1480	656	787	862	751	893	430	297	---	661	652	660
21	1480	639	---	860	740	---	435	292	491	669	652	639
22	1060	619	786	823	---	847	426	305	499	671	---	631
23	851	---	781	823	771	839	412	---	531	643	658	643
24	851	586	822	839	995	852	402	305	552	653	642	647
25	946	582	---	---	909	880	---	303	550	---	668	669
26	---	599	823	748	911	830	465	302	532	668	661	---
27	---	---	813	746	875	830	448	302	---	657	658	667
28	945	629	---	749	880	---	950	302	521	662	659	650
29	930	710	809	731	---	770	1050	278	520	671	---	660
30	880	---	820	838	---	782	1140	---	540	668	621	652
31	790	---	828	889	---	768	---	---	---	678	621	---
MONTH	981	653	794	817	804	941	673	383	413	616	653	639

YEAR MAX 1530 MIN 278 MEAN 698

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		---	0.0	---	---	0.0	6.0	9.0	11.0	20.0	---	19.0
2		---	0.0	0.0	0.0	0.0	6.0	---	11.0	19.0	20.0	18.0
3		---	0.0	0.0	0.0	0.0	6.5	10.0	12.0	17.0	20.0	17.0
4		---	0.0	---	0.0	0.0	---	11.0	10.0	---	19.0	17.0
5		---	0.0	0.0	0.0	0.0	10.0	7.5	12.0	---	18.0	---
6		---	0.0	0.0	0.0	0.0	10.5	8.0	---	20.0	18.0	---
7		---	---	0.0	0.0	---	11.0	8.0	10.0	21.0	19.0	14.0
8		---	0.0	0.0	---	---	13.0	9.0	10.0	20.0	---	12.0
9		---	0.0	0.0	0.0	---	13.5	---	12.0	20.0	17.0	14.0
10		---	0.0	0.0	0.0	---	13.0	10.5	13.0	20.0	17.0	14.0
11		---	0.0	---	0.0	---	---	10.0	12.0	---	18.0	15.0
12		0.0	0.0	0.0	0.0	---	13.5	8.0	11.0	20.0	19.0	---
13		0.0	0.0	0.0	0.0	---	13.0	10.5	---	20.0	20.0	14.0
14		0.0	---	0.0	0.0	---	12.0	10.5	10.0	21.0	20.0	14.0
15		6.0	0.0	0.0	---	---	10.5	7.0	12.0	20.0	---	15.0
16		---	0.0	0.0	0.0	4.0	8.5	---	11.0	20.0	16.0	15.0
17		3.0	0.0	0.0	0.0	---	6.5	10.0	11.0	21.0	16.0	16.0
18		3.0	0.0	---	0.0	3.0	---	9.5	13.0	---	16.0	15.0
19		0.0	0.0	0.0	0.0	4.0	8.0	10.0	15.0	18.0	17.0	---
20		0.0	0.0	0.0	0.0	7.0	7.0	10.0	---	18.0	16.0	12.0
21		0.0	---	0.0	0.0	---	7.0	10.0	16.0	20.0	17.0	14.0
22		0.0	0.0	0.0	---	5.0	7.5	14.0	15.0	18.0	---	15.0
23		---	0.0	0.0	0.0	5.0	7.5	---	13.0	19.0	19.0	15.0
24		0.0	0.0	0.0	0.0	4.5	8.0	12.0	13.0	21.0	18.0	15.0
25		0.0	---	---	0.0	4.0	---	11.0	12.0	---	20.0	15.0
26		0.0	0.0	0.0	0.0	4.0	4.0	11.0	11.0	20.0	16.0	---
27		---	0.0	0.0	0.0	4.0	3.0	13.0	---	20.0	14.0	14.0
28		0.0	---	0.0	0.0	---	4.0	12.0	16.0	19.0	15.0	14.0
29		0.0	0.0	0.0	---	4.5	5.0	14.0	18.0	20.0	---	14.0
30		---	0.0	0.0	---	5.0	8.0	---	19.0	20.0	18.0	15.0
31		---	0.0	0.0	---	7.0	---	---	---	20.0	18.0	---
MONTH		---	0.0	0.0	0.0	---	8.5	10.0	12.5	19.5	17.5	15.0

06090300 MISSOURI RIVER NEAR GREAT FALLS, MT

LOCATION.--Lat 47°34'55", long 111°03'35", in NE¼NW¼ sec.14, T.21 N., R.5 E., Cascade County, Hydrologic Unit 10030102, at Morony Dam, 12.6 mi (20.3 km) northeast of Great Falls, and at mile 2,105.6 (3,387.9 km).

DRAINAGE AREA.--23,292 mi² (60,326 km²).

PERIOD OF RECORD.--May to July 1953 (in WSP 1320-B), October 1956 to current year.

GAGE.--Nonrecording gage at cableway. Datum of gage is 2,809.21 ft (856.247 m) above mean sea level (levels by Bureau of Reclamation). Prior to October 1971, Foxboro meters were used for determining discharge through powerplant. Water-stage recorder on Morony Reservoir used for determining head on taintor gates; datum of gage is at mean sea level (levels by The Montana Power Company).

REMARKS.--Records fair. Discharge obtained from The Montana Power Company at Rainbow Dam, 7.05 mi (11.3 km) upstream. Nonrecording gage and cable 800 ft (244 m) downstream from Morony Dam for measurements to check discharge data supplied by The Montana Power Company. Flow regulated by 18 smaller irrigation reservoirs and powerplants (see p.577), Clark Canyon Reservoir (see p.37), and Canyon Ferry Reservoir (see p.70). Diversions for irrigation of about 750,400 acres (3,040 km²) above station.

COOPERATION.--Records collected by The Montana Power Company, under general supervision of Geological Survey, in connection with a Federal Power Commission project.

AVERAGE DISCHARGE.--20 years, 8,044 ft³/s (227.8 m³/s), 5,828,000 acre-ft/yr (7.19 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 72,000 ft³/s (2,040 m³/s) June 10, 1964 (from hydrographic comparison with nearby stations); minimum, about 1.0 ft³/s (0.028 m³/s) Sept. 16, 1962, powerplant shutdown; minimum daily, 1,760 ft³/s (49.8 m³/s) Apr. 16, 1961. Flood of June 10, 1964, is the highest since 1908.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 31,000 ft³/s (878 m³/s) May 16; minimum daily, 2,300 ft³/s (65.1 m³/s) Mar. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7590	11300	9380	6850	8150	2300	9100	17500	20600	18900	7190	6770
2	8080	10400	10000	3140	8140	2790	9550	18500	20200	18100	7830	6920
3	7070	10200	10600	4540	8250	4930	9580	20200	19700	15500	7720	7030
4	8190	9920	12000	6230	6680	6460	9510	21300	19800	14200	8520	7080
5	8810	10200	12400	7310	4350	7440	10700	23900	19600	13800	7980	6780
6	8810	10500	11400	7750	4850	8130	9760	27300	19800	13400	7830	6700
7	8520	11000	11100	7290	5520	8510	9080	28900	20200	13000	7710	6700
8	7570	11000	11000	6490	7160	9260	10000	27700	20400	11600	7560	6770
9	7800	11100	10800	6440	8980	10000	10100	26600	19900	10300	7860	7210
10	7520	11000	10700	6890	9330	9540	10400	26700	17700	9410	7670	7300
11	7220	10800	10500	7590	9090	7850	10600	27000	16300	8660	7590	6950
12	7340	10400	10200	8350	9030	8270	10900	27700	16300	9040	7540	6780
13	7990	10500	8890	8450	8900	7880	11100	27700	16700	8720	7490	7080
14	8570	10600	9140	8280	8750	8590	11900	27500	16000	8580	7520	6950
15	7530	10700	8250	8460	7950	8710	12200	29100	15600	7340	7350	6360
16	8350	10100	8340	8600	7950	8880	12500	31000	14900	7940	7200	6790
17	8380	10300	8360	9460	8330	9670	14100	28300	14400	7400	7020	7300
18	8540	10600	8900	10200	8300	10500	18300	26900	14700	7540	7110	7050
19	8480	10500	9640	10200	8080	11200	17400	26700	14400	7600	7220	6820
20	8580	9370	10000	9530	8100	10600	16700	26000	14200	7570	7240	7270
21	8360	8860	8200	8880	7800	10200	16600	25200	13800	7710	7470	7240
22	8110	9350	8200	8440	7880	9660	16200	24500	14000	7600	7720	7280
23	8490	9360	8400	8490	7820	9810	16400	23600	14300	7530	7670	7360
24	9060	9580	8630	8720	7790	9620	15500	22900	14700	7110	8080	7070
25	8290	9560	8630	8440	7690	10200	15800	23300	16800	7810	7720	6810
26	8940	9660	8200	7970	8030	9540	15600	23700	19300	8310	7810	7290
27	9510	9580	8280	8300	7580	9430	16700	22800	21500	8080	7390	7190
28	9750	9120	8340	8810	7750	9610	16400	21500	19900	8110	7090	7220
29	9550	8980	8220	8210	7560	9500	16500	21800	19400	7240	7240	7150
30	11100	8820	8380	8300	---	9450	16700	21500	19900	7080	7190	7330
31	10900	---	7840	8350	---	9400	---	20900	---	6820	6710	---
TOTAL	263000	303360	292920	244960	225790	267930	395880	768200	525000	302000	233240	210550
MEAN	8484	10110	9449	7902	7786	8643	13200	24780	17500	9742	7524	7018
MAX	11100	11300	12400	10200	9330	11200	18300	31000	21500	18900	8520	7360
MIN	7070	8820	7840	3140	4350	2300	9080	17500	13800	6820	6710	6360
AC-FT	521700	601700	581000	485900	447900	531400	785200	1524000	1041000	599000	462600	417600

CAL YR 1975 TOTAL 4543540 MEAN 12450 MAX 60200 MIN 5100 AC-FT 9012000
WTR YR 1976 TOTAL 4032830 MEAN 11020 MAX 31000 MIN 2300 AC-FT 7999000

06090500 BELT CREEK NEAR MONARCH, MT

LOCATION.--Lat 47°12'27", long 110°55'53", in NW¼SE¼NW¼ sec.26, T.17 N., R.6 E., Cascade County, Hydrologic Unit 10030105, on left bank 0.4 mi (0.6 km) south of Riceville and 8.9 mi (14.3 km) northwest of Monarch.

DRAINAGE AREA.--368 mi^2 (953 km^2).

PERIOD OF RECORD.--April 1951 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,960 ft (1,207 m), by barometer.

REMARKS.--Records good except those for winter period, which are poor. No regulation or diversion above station.

AVERAGE DISCHARGE.--25 years, 189 ft^3/s (5.353 m^3/s), 136,900 acre-ft/yr (169 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,000 ft^3/s (312 m^3/s) June 4, 1953, gage height, 10.12 ft (3.085 m), from rating curve extended above 2,500 ft^3/s (70.8 m^3/s) on basis of slope-area measurement of peak flow, no flow Feb. 21, Dec. 24, 1962, caused by ice jams upstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1908 was several feet lower than in 1953, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 600 ft^3/s (17.0 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 11	1100	1520	43.0	4.58	1.396	June 23	2100	*1550	43.9	*4.62	1.408

Minimum daily discharge, 27 ft^3/s (0.765 m^3/s) Mar. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	98	105	70	46	44	30	53	187	647	594	149	82
2	96	107	90	44	43	28	52	277	604	542	157	80
3	93	106	95	43	45	27	46	400	574	496	145	79
4	92	110	94	44	41	28	48	576	571	455	135	78
5	92	110	90	44	40	32	56	894	569	423	134	77
6	91	110	76	44	43	36	84	1030	538	393	132	77
7	91	109	81	44	46	40	153	1000	528	372	126	78
8	103	102	83	40	50	44	198	1060	500	351	126	80
9	99	90	85	38	54	48	232	1250	478	332	124	79
10	98	83	80	36	60	40	221	1350	454	314	120	77
11	108	80	72	37	60	38	222	1480	435	295	119	76
12	119	76	66	40	54	36	281	1330	408	344	114	78
13	127	105	60	42	40	40	327	1200	391	317	110	79
14	117	108	54	46	41	46	326	1380	451	278	109	76
15	117	101	52	50	39	48	316	1300	440	259	105	74
16	118	104	50	56	39	35	293	1160	505	245	103	73
17	113	94	50	60	39	66	258	1120	847	233	100	72
18	118	77	50	70	38	70	227	1180	939	229	98	73
19	122	70	54	54	37	81	207	1160	878	241	98	74
20	121	62	60	54	37	55	192	1120	860	230	94	74
21	130	61	66	49	37	48	178	1070	823	210	92	72
22	129	60	70	49	38	45	172	1020	1130	199	90	70
23	116	60	74	49	37	48	159	1000	1470	188	96	70
24	109	60	70	46	38	44	148	962	1450	181	128	70
25	108	60	60	46	37	45	162	932	1290	176	102	76
26	116	58	58	44	39	42	161	859	1120	169	97	79
27	107	54	58	46	38	44	149	795	961	162	94	76
28	105	52	58	49	36	40	140	782	834	157	90	74
29	105	47	56	46	33	39	146	773	731	153	87	72
30	105	48	52	46	---	37	154	709	657	149	85	70
31	107	---	50	44	---	44	---	674	---	152	83	---
TOTAL	3372	2465	2084	1446	1223	1344	5361	30024	22083	8839	3442	2265
MEAN	109	82.2	67.2	46.6	42.2	43.4	179	969	736	285	111	75.5
MAX	130	110	95	70	60	81	327	1480	1470	594	157	82
MIN	91	47	50	36	33	27	46	187	391	149	83	70
AC-FT	6690	4890	4130	2870	2430	2670	10630	59550	43800	17530	6830	4490

CAL YR 1975 TOTAL 128874 MEAN 353 MAX 2630 MIN 17 AC-FT 255600
WTR YR 1976 TOTAL 83948 MEAN 229 MAX 1480 MIN 27 AC-FT 166500

06090800 MISSOURI RIVER AT FORT BENTON, MT

LOCATION.--Lat 47°49'03", long 110°39'59", in SE¼SE¼ sec.23, T.24 N., R.8 E., Chouteau County, Hydrologic Unit 10030102, on left bank at downstream side of abandoned highway bridge at Fort Benton, 3.8 mi (6.1 km) upstream from Shonkin Creek, and at mile 2,073.2 (3,335.8 km).

DRAINAGE AREA.--24,749 mi^2 (64,100 km^2).

PERIOD OF RECORD.--October 1890 to current year. Records for June 1881 to September 1890, published in WSP 546 and 761, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 746: 1932. WSP 1146: 1891-1907, 1908(M), 1909-18, 1937-38. WSP 1209: 1948(P). WSP 1309: 1929(M). WSP 1629: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 2,614.05 ft (796.762 m) above mean sea level. Prior to Oct. 11, 1920, nonrecording gages, and Oct. 11, 1920, to Apr. 25, 1924, water-stage recorder, all at present site at datum 1.00 ft (0.305 m) higher.

REMARKS.--Records good. Flow regulated by 18 smaller irrigation reservoirs and powerplants (see p. 577), Clark Canyon Reservoir (see p. 37), and Canyon Ferry Reservoir (see p.70). Diversions for irrigation of about 750,400 acres (3,040 km^2) above station. Extreme diurnal fluctuation caused by powerplant at Morony Dam.

AVERAGE DISCHARGE.--86 years, 7,782 ft^3/s (220.4 m^3/s), 5,638,000 acre-ft/yr (6.95 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, about 140,000 ft^3/s (3,960 m^3/s) June 6, 1908, gage height, 18.5 ft (5.64 m), present datum, from rating curve extended above 63,000 ft^3/s (1,780 m^3/s); minimum, 320 ft^3/s (9.06 m^3/s) July 5, 1936, gage height, -0.50 ft (-0.15 m); minimum daily, 627 ft^3/s (17.8 m^3/s) July 5, 1936.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 33,200 ft^3/s (940 m^3/s) May 7, gage height, 8.21 ft (2.502 m); maximum gage height, 9.77 ft (2.978 m) Mar. 5 (backwater from ice); minimum daily discharge, 2,800 ft^3/s (79.3 m^3/s) Mar. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8110	11100	8860	7000	8290	6400	9760	18500	21100	19500	7620	7350
2	8730	10700	10400	5500	8350	2800	9880	19500	20800	18900	7890	7280
3	8610	10500	10300	4000	8370	3500	10200	20700	20200	16500	8300	7280
4	7760	10200	11700	4700	8620	5200	10000	21800	20200	15000	8650	7850
5	8920	10300	12000	6200	6300	7000	10800	24200	20400	14400	8610	7320
6	9110	10600	11000	7400	5400	7800	10700	28100	20100	14100	8570	7510
7	8750	10900	10800	8000	5200	8400	8800	29300	21000	13800	8380	7470
8	7970	11000	10800	7400	6200	9000	10600	28500	20900	12600	8270	7730
9	7920	10900	10800	6800	7000	9600	11100	27700	20500	11100	8340	7320
10	7690	10900	10400	6800	8000	9880	11300	27700	18600	10600	8340	7540
11	7620	10800	10400	7200	9470	8420	11500	27800	17200	10000	8110	7390
12	7780	10500	10100	8000	9260	8340	11900	28600	16600	10000	8300	7280
13	8260	10400	10300	8600	9280	8000	11900	28500	17200	10200	7810	7810
14	8880	10500	9800	8600	9320	8490	12500	28200	16800	9520	8270	7620
15	8290	10600	9400	8570	8220	8840	12400	29200	16700	7920	7770	7510
16	8650	10300	8800	9040	8300	8800	13300	31100	16000	8880	7810	7160
17	8720	10300	9400	9530	8240	9600	15300	29100	16100	7850	7810	7890
18	9010	10400	8900	10200	8170	10600	17400	27600	16100	8190	7660	7850
19	8890	10400	9200	10300	8200	11300	17300	27300	16100	8230	7660	7470
20	9060	9980	10300	9830	8080	10900	16800	26600	15600	8300	7390	7960
21	8830	8920	9120	9290	7810	10400	16500	25800	15400	8340	7540	7960
22	8340	9620	8820	9080	8050	10200	16200	25000	15500	8300	7660	7850
23	9220	9470	8680	9200	8090	9950	16600	24400	16100	8190	7580	7960
24	9440	9640	8690	9070	7830	9840	16200	23800	16800	7960	8150	8000
25	8570	9890	8740	9070	8140	10300	16600	23900	18300	8000	8080	7050
26	9410	9670	8630	8710	8000	9760	16900	24200	20300	7850	7960	7620
27	9990	9640	8460	8080	8000	9920	18100	23600	21900	8530	7890	8150
28	10100	9330	8470	8060	7770	9840	17500	22000	21000	8570	7770	7200
29	10200	9170	8480	8840	7700	9880	17800	22200	20500	8340	7620	7510
30	10600	8930	8560	8490	---	9880	17900	22100	19800	7690	7660	7660
31	11400	---	8710	8530	---	9880	---	21400	---	7390	7350	---
TOTAL	274830	305560	299020	250090	229660	272720	413740	788400	553800	325350	246820	227550
MEAN	8865	10190	9646	8067	7919	8797	13790	25430	18460	10500	7962	7585
MAX	11400	11100	12000	10300	9470	11300	18100	31100	21900	19500	8650	8150
MIN	7620	8920	8460	4000	5200	2800	8800	18500	15400	7390	7350	7050
AC-FT	545100	606100	593100	496100	455500	540900	820700	1564000	1098000	645300	489600	451300

CAL YR 1975 TOTAL 4669670 MEAN 12790 MAX 58600 MIN 5580 AC-FT 9262000
WTR YR 1976 TOTAL 4187540 MEAN 11440 MAX 31100 MIN 2800 AC-FT 8306000

06092000 TWO MEDICINE RIVER NEAR BROWNING, MT

LOCATION.--Lat 48°28'25", long 112°48'06", in NW¼SW¼SE¼ sec.5, T.31 N., R.9 W., Glacier County, Hydrologic Unit 10030201, on right bank 1,000 ft (305 m) upstream from bridge on U.S. Highway 89, 11 mi (18 km) southeast of Browning, and 15 mi (24 km) upstream from Badger Creek.

DRAINAGE AREA.--317 mi^2 (821 km^2).

PERIOD OF RECORD.--April 1907 to October 1924, May 1951 to current year. Monthly discharge only for some periods, published in WSP 1309. Published as Two Medicine River at Family 1907-24. October 1957 to September 1964, published as Two Medicine Creek near Browning.

REVISED RECORDS.--WSP 1309: 1908, 1910, 1913, 1916, 1918. WSP 1559: 1915(M), 1917-18(M), 1921-24. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 3,930 ft (1,198 m), from topographic map. Prior to Nov. 1, 1924, nonrecording gage at several sites within 3 mi (5 km) of present site at various datums. May 1, 1951, to Sept. 30, 1964, and Oct. 1, 1964, to Sept. 27, 1967, water-stage recorder at site 150 ft (45.7 m) downstream at datums 2.00 ft (0.610 m) higher and present datum, respectively.

REMARKS.--Records fair except those for winter period, which are poor. Flow regulated by Lower Two Medicine Lake (see p.580). Diversions above station into Two Medicine Canal for irrigation of about 10,000 acres (40.5 km^2) below station. Recorded diversions from Two Medicine River above station for the current year are listed in daily table below.

AVERAGE DISCHARGE.--42 years, 385 ft^3/s (10.90 m^3/s), 278,900 acre-ft/yr (344 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 100,000 ft^3/s (2,830 m^3/s) June 8, 1964, gage height, 15.5 ft (4.72 m) from floodmark in gage well, 16.0 ft (4.88 m) from outside flood mark, present datum; minimum, 1.1 ft^3/s (0.031 m^3/s) Aug. 16, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,390 ft^3/s (96.0 m^3/s) May 11, gage height, 4.81 ft (1.466 m); maximum gage height, 9.91 ft (3.021 m) Dec. 3 (backwater from ice); minimum daily discharge, 7.2 ft^3/s (0.204 m^3/s) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	157	145	220	225	100	202	712	1060	492	30	83
2	68	163	200	200	210	95	178	875	942	502	22	80
3	62	254	2500	210	200	95	174	1090	823	469	14	80
4	68	306	1000	210	190	100	210	1360	712	424	14	79
5	96	319	900	200	180	110	273	1490	634	404	18	76
6	88	330	700	180	195	125	330	1740	670	387	20	76
7	120	323	500	180	210	140	424	1680	809	372	16	81
8	153	297	400	190	210	150	547	1890	776	363	15	81
9	159	267	300	220	210	160	676	2370	942	360	14	81
10	163	249	270	230	205	170	763	2570	1160	334	53	77
11	171	221	250	225	195	160	823	3050	1240	290	93	75
12	185	195	220	215	190	150	883	2380	1120	283	85	77
13	180	221	210	200	185	155	959	2160	986	273	77	76
14	171	218	200	210	180	150	866	2720	816	240	72	60
15	167	216	200	230	175	150	823	2190	682	213	83	49
16	171	218	210	270	170	155	738	1880	629	185	102	32
17	165	216	220	280	170	165	634	1770	725	161	100	30
18	161	213	225	280	175	180	579	1640	676	143	80	21
19	167	210	230	260	180	190	542	1460	670	145	70	21
20	202	210	230	270	190	178	512	1480	744	137	81	20
21	208	210	230	260	180	180	502	1340	809	133	129	19
22	205	195	235	250	175	171	483	1290	769	120	141	18
23	192	190	235	240	165	187	450	1350	700	104	155	18
24	178	180	240	230	160	157	437	1500	629	96	147	18
25	171	175	240	220	145	157	517	1680	584	93	133	28
26	169	170	240	230	135	143	492	1460	502	77	117	28
27	159	160	240	235	120	139	464	1280	441	71	105	21
28	151	155	240	240	115	122	455	1440	412	67	84	13
29	153	150	240	240	110	131	429	1310	408	51	75	8.1
30	159	145	240	235	---	126	507	1150	437	33	68	7.2
31	157	---	230	230	---	155	---	1120	---	35	80	---
TOTAL	4694	6535	11720	7090	5150	4546	15872	51427	22567	7057	2293	1433.3
MEAN	151	218	378	229	178	147	529	1659	751	228	74.0	47.8
MAX	208	330	2500	280	225	190	959	3050	1240	502	155	83
MIN	62	145	145	180	110	95	174	712	408	33	14	7.2
AC-FT	9310	12960	23250	14060	10220	9020	31480	102000	44680	14000	4550	2840
(†)	305	0	0	0	0	0	0	3160	10600	14100	7650	4450

CAL YR 1975	TOTAL	246175.0	MEAN 674	MAX	35500	MIN	17	AC-FT	488300	(†)	20,977
WTR YR 1976	TOTAL	140344.3	MEAN 383	MAX	3050	MIN	7.2	AC-FT	278400	(†)	40,265

† Diversions, in acre-feet, by Two Medicine Canal.

06093200 BADGER CREEK BELOW FOUR HORNS CANAL, NEAR BROWNING, MT

LOCATION.--Lat 48°22'12", long 112°48'07", in NW¼SW¼SE¼ sec.8, T.30 N., R.9 W., Glacier County, Hydrologic Unit 10030201, on left bank, 3.4 mi (5.5 km) downstream from point of diversions to Four Horns Canal, 11.6 mi (18.7 km) upstream from mouth, and 15.5 mi (24.9 km) southeast of Browning.

DRAINAGE AREA.--152 mi^2 (394 km^2).

PERIOD OF RECORD.--October 1973 to current year. If monthly figures of diversion to Four Horns Canal are added to records at this site, records equivalent to those published as Badger Creek near Browning (1951-73) can be obtained.

GAGE.--Water-stage recorder. Altitude of gage is 4,140 ft (1,262 m), from topographic map. May 1951 to September 1973, water-stage recorder at site 3.4 mi (5.5 km) upstream at datum 4,179.26 ft (1,273.838 m) above mean sea level (Bureau of Reclamation bench mark).

REMARKS.--Records good except those for winter period, which are fair. Four Horns Canal diverts water from right bank in NE¼ sec.24, T.30 N., R.10 W., at diversion dam 3.4 mi (5.5 km) upstream for irrigation of about 6,000 acres (24.3 km^2) below station. Recorded diversions from Badger Creek above station for the current year are listed in daily table below.

AVERAGE DISCHARGE.--24 years (1951-76), 236 ft^3/s (6.684 m^3/s), 21.07 in/yr (535 mm/yr), 171,000 acre-ft/yr (211 hm^3/yr), adjusted for diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,700 ft^3/s (1,410 m^3/s) June 8, 1964, gage height, 10.37 ft (3.161 m), from rating curve extended above 2,000 ft^3/s (56.6 m^3/s) on basis of slope-area measurement of peak flow (site and datum then in use); minimum daily, 25 ft^3/s (0.71 m^3/s) Dec. 11-15, 1963, site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,660 ft^3/s (47.0 m^3/s) May 14, gage height, 6.24 ft (1.902 m); maximum gage height, 6.57 ft (2.003 m), backwater from ice; minimum daily discharge, 63 ft^3/s (1.784 m^3/s) Aug. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	72	142	180	110	118	75	121	294	692	416	77	97
2	71	142	210	110	120	80	116	400	662	351	73	95
3	72	154	250	105	125	85	114	536	620	297	69	94
4	76	176	260	100	93	95	117	684	525	284	72	93
5	78	181	250	100	108	100	125	668	543	278	80	92
6	74	173	237	100	155	110	138	757	643	270	75	93
7	98	167	198	110	155	120	167	819	687	206	74	96
8	117	162	186	120	142	139	207	993	647	203	71	96
9	155	160	196	140	134	122	258	1260	887	249	67	93
10	153	150	195	140	128	132	292	1370	951	213	68	90
11	157	140	199	140	124	113	339	1480	945	194	69	90
12	160	150	200	140	120	120	392	1030	743	205	63	90
13	155	151	190	130	124	124	441	979	635	190	66	103
14	151	146	180	150	123	127	388	1540	515	169	71	123
15	150	148	190	180	136	144	347	1160	447	154	77	122
16	152	152	200	220	119	115	311	937	444	149	77	122
17	149	149	200	240	115	141	273	971	533	148	69	121
18	149	162	195	230	119	148	250	940	488	142	82	122
19	151	173	193	228	143	128	231	855	509	139	109	121
20	166	176	178	183	132	120	219	896	610	132	112	120
21	161	186	171	183	144	114	211	746	586	130	116	119
22	160	187	169	190	114	110	205	761	520	119	109	120
23	153	171	160	210	111	116	195	820	477	112	109	118
24	148	164	155	230	110	112	189	1020	414	108	110	118
25	147	167	147	240	106	112	209	1150	376	105	106	122
26	147	169	143	210	104	109	228	866	328	99	106	121
27	147	154	140	194	103	108	204	744	298	95	104	119
28	144	150	140	140	84	107	211	952	310	89	101	117
29	143	145	140	135	80	107	209	795	335	88	102	117
30	141	145	139	125	---	106	237	708	397	88	100	114
31	144	---	121	121	---	114	---	729	---	82	99	---
TOTAL	4141	4792	5712	4954	3489	3553	6944	27860	16747	5624	2683	3258
MEAN	134	160	184	160	120	115	231	899	558	181	86.5	109
MAX	166	187	260	240	155	148	441	1540	951	416	116	123
MIN	71	140	121	100	80	75	114	294	298	82	63	98
CFSM	.88	1.05	1.21	1.05	.79	.76	1.52	5.91	3.67	1.19	.57	.72
IN.	1.01	1.17	1.40	1.21	.85	.87	1.70	6.82	4.10	1.38	.66	.80
AC-FT	8210	9500	11330	9830	6920	7050	13770	55260	33220	11160	5320	6460
(†)	1280	2.0	0	0	0	3.4	9.5	376	5070	6530	4810	1240

CAL YR 1975 TOTAL 13413E MEAN 368 MAX 14000 MIN 60 CFSM 2.42 IN 32.83 AC-FT 266100 (†) 8910
WTR YR 1976 TOTAL 89757 MEAN 245 MAX 1540 MIN 63 CFSM 1.61 IN 21.97 AC-FT 178000 (†) 19320

06099500 MARIAS RIVER NEAR SHELBY, MT

LOCATION.--Lat 48°25'38", long 111°53'20", in E½NW¼SE¼ sec.20, T.31 N., R.2 W., Toole County, Hydrologic Unit 10030203, on left bank 200 ft (61 m) downstream from bridge on U.S. Highway 91, 5.1 mi (8.2 km) south of Shelby, 24 mi (39 km) downstream from Cut Bank Creek, and at mile 168 (270 km).

DRAINAGE AREA.--3,242 mi^2 (8,397 km^2), of which 518 mi^2 (1,342 km^2) is probably noncontributing.

PERIOD OF RECORD.--April 1902 to December 1904, May 1905 to December 1906, May 1907 to January 1908, April 1911 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1903-4, 1918, 1921, 1933, 1935, 1947. WSP 1509: 1902, 1912(M), 1916, 1943(M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,087.72 ft (941.137 m) above mean sea level. Prior to Dec. 23, 1947, nonrecording gage or water-stage recorder at several sites within 1,000 ft (305 m) of present site at approximately the same datum.

REMARKS.--Records good except those for winter period, which are poor. Some regulation by Lower Two Medicine Lake, Four Horns Reservoir, Swift Reservoir and Lake Frances (see p.580-581), having a combined capacity of 172,630 acre-ft (213 hm^3). Diversions for irrigation of about 50,000 acres (202 km^2) above station and about 15,000 acres (60.7 km^2) below.

AVERAGE DISCHARGE.--68 years, (1902-4, 1905-6, 1911-76), 962 ft^3/s (27.24 m^3/s), 697,000 acre-ft/yr (859 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 241,000 ft^3/s (6,830 m^3/s) June 9, 1964, largely due to failure of Swift Dam, gage height, 23.64 ft (7.205 m), from floodmark, from rating curve extended above 34,000 ft^3/s (963 m^3/s) on basis of slope-area measurement of peak flow; minimum observed, 10 ft^3/s (0.283 m^3/s) Aug. 20, 1919.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,160 ft^3/s (174 m^3/s) May 12, gage height, 7.01 ft (2.137 m); maximum gage height, 8.93 ft (2.722 m) Jan. 18 (backwater from ice); minimum daily discharge, 270 ft^3/s (7.65 m^3/s) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	365	625	580	560	1100	700	648	1750	2420	1190	340	373
2	361	619	1000	540	1050	600	690	2250	2350	1330	330	356
3	356	813	3000	520	900	500	590	2620	2100	1380	430	336
4	347	600	2000	500	800	550	673	2970	1900	1240	430	322
5	347	560	1500	400	700	600	831	3340	1750	1150	501	315
6	356	500	1400	350	740	660	734	4060	1680	1080	631	309
7	410	450	1300	300	800	700	850	4370	2010	1060	657	302
8	540	500	1300	350	920	760	1140	4220	2080	1070	631	309
9	625	580	1400	400	900	800	1420	4580	2030	1070	559	315
10	679	640	600	450	840	860	1630	5130	2280	1090	520	329
11	673	673	500	500	860	820	1740	5480	2590	1010	501	315
12	685	655	520	500	880	780	1950	5740	2640	988	492	302
13	773	640	540	500	840	800	2100	5020	2350	968	474	302
14	850	620	540	520	880	820	2230	4840	2180	955	447	302
15	752	560	520	600	900	840	2100	5770	1920	891	430	315
16	673	500	520	700	880	1000	1950	5020	1680	820	430	315
17	643	470	540	740	840	1300	1530	4310	1630	772	447	322
18	619	440	560	600	840	1700	1610	4010	1750	760	456	315
19	589	420	590	660	860	1800	1450	3820	1650	760	447	302
20	565	350	700	700	880	1550	1360	3480	1620	740	438	309
21	613	370	680	740	860	1140	1280	3420	1800	725	421	309
22	879	380	660	780	880	1190	1230	3220	1920	880	474	315
23	745	390	660	740	860	1100	1200	3180	1840	820	530	315
24	745	390	660	720	880	977	1160	3280	1750	580	567	302
25	715	380	640	800	860	811	1110	3580	1560	580	585	309
26	885	360	660	900	880	762	1300	3500	1480	520	559	309
27	661	370	640	1100	900	699	1400	3090	1330	510	492	315
28	649	370	580	1250	840	673	1410	2880	1180	480	474	309
29	637	360	600	1200	800	657	1410	2990	1110	425	447	276
30	625	360	590	1200	---	640	1450	2840	1090	380	430	270
31	631	---	580	1200	---	631	---	2490	---	360	397	---
TOTAL	18593	14725	26760	21020	25130	27420	40376	117230	55670	26184	14987	9396
MEAN	600	491	863	678	867	885	1346	3782	1856	845	483	313
MAX	850	673	3000	1250	1100	1800	2230	5770	2640	1380	657	373
MIN	347	350	500	300	700	500	831	1750	1090	360	330	270
AC-FT	36880	29210	53080	41690	49850	54390	80090	232500	110400	51940	29690	18640

CAL YR 1975 TOTAL 664734 MEAN 1821 MAX 53200 MIN 85 AC-FT 1318000
WTR YR 1976 TOTAL 397471 MEAN 1086 MAX 5770 MIN 270 AC-FT 788400

06101300 LAKE ELWELL NEAR CHESTER, MT
(Formerly published as Tiber Reservoir near Chester, Mt.)

LOCATION.--Lat 48°19'06", long 111°05'27", in NW¼ sec.33, T.30 N., R.5 E., Liberty County, Hydrologic Unit 10030203, in control house of river outlet tunnel at Tiber Dam on Marias River, 15 mi (24 km) southwest of Chester.

DRAINAGE AREA.--4,923 mi^2 (12,751 km^2), of which 518 mi^2 (1,342 km^2) is probably noncontributing.

PERIOD OF RECORD.--October 1955 to current year (monthend contents only). Daily elevations and contents May to June 1964, published in WSP 1840-B. Prior to October 1975 published as Tiber Reservoir near Ch

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Nonrecording gages read once daily except weekends and holidays. Datum of gage is at mean sea level (levels by Bureau of Reclamation). Records of daily elevations on file in Helena district office.

REMARKS.--Reservoir is formed by rolled earthfill dam with concrete spillway chute; construction began in September 1952; completed in March 1956. Storage began Oct. 28, 1955. Usable capactity, 1,347,000 acre-ft (1.66 km^3) between elevation 2,870.00 ft (874.776 m), trashrack sill, and 3,012.50 ft (918.210 m), top of flood control. Dead storage, 21,580 acre-ft (26.6 hm^3) below elevation, 2,870.00 ft (874.776 m). Prior to Oct. 1, 1963, usable capacity was 1,313,000 acre-ft (1.62 km^3) and dead storage was 24,000 acre-ft (29.6 hm^3) at same elevations. Figures given herein represent uasable contents. Water is presently used for recreation and flood control.

COOPERATION.--Elevations and capacity table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 1,193,000 acre-ft (1.47 km^3) July 12, 13, 1965 (elevation, 3,005.59 ft or 916.104 m); minimum observed since normal operation began, 442,100 acre-ft (520 hm^3) Apr. 1, 1968 (elevation, 2,953.81 ft or 900.321 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 680,500 acre-ft (8.39 hm^3) July 11-16 (elevation, 2,976.20 ft or 907.146 m); minimum observed, 541,400 acre-ft (668 hm^3) Apr. 10 (elevation, 2,965.14 ft or 903.775 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	2,971.47	617,800	
Oct. 31	2,968.82	584,900	-32,900
Nov. 30	2,967.68	571,200	-13,700
Dec. 31	2,968.75	584,000	+12,800
CAL YR 1975			-76,300
Jan. 31	2,968.53	581,400	- 2,600
Feb. 29	2,967.66	570,900	-10,500
Mar. 31	2,966.10	552,500	-18,400
Apr. 30	2,965.50	545,600	- 6,900
May 31	2,972.25	627,700	+82,100
June 30	2,975.86	675,800	+48,100
July 31	2,975.25	667,500	- 8,300
Aug. 31	2,973.03	637,800	-29,700
Sept. 30	2,969.58	594,200	-43,600
WTR YR 1976			-23,600

06101500 MARIAS RIVER NEAR CHESTER, MT

LOCATION.--Lat 48°18'21", long 111°04'44", in SW¼SW¼ sec.34, T.30 N., R.5 E., Liberty County, Hydrologic Unit 10030203, on left bank 2.0 mi (3.2 km) downstream from Tiber Dam, 4.3 mi (6.9 km) upstream from Pondera Coulee, and 15 mi (24 km) southwest of Chester.

DRAINAGE AREA.--4,927 mi^2 (12,761 km^2), of which 518 mi^2 (1,342 km^2) is probably noncontributing.

PERIOD OF RECORD.--April to September 1921, October 1945 to September 1947, October 1955 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1629: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,814.03 ft (857.716 m) above mean sea level (Bureau of Reclamation bench mark). Prior to Oct. 1, 1921, nonrecording gage at bridge 2.5 mi (4.0 km) downstream at different datum. Oct. 4, 1945, to Sept. 30, 1946, nonrecording gage at site 3 mi (5 km) downstream at different datum.

REMARKS.--Records excellent. Flow completely regulated by Lake Elwell (Tiber Reservoir) since Oct. 28, 1955 (see preceding page).

AVERAGE DISCHARGE.--23 years (1945-47, 1955-76), 931 ft^3/s (26.37 m^3/s), 674,500 acre-ft/yr (838 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge not determined, occurred about Mar. 20, 1947; minimum, probably less than 0.2 ft^3/s (0.006 m^3/s) during period of no gage-height record Oct. 29 to Nov. 10, 1955, when gates at dam were closed.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1948 reached a stage of 16 ft (5 m), present datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,990 ft^3/s (84.7 m^3/s) May 27, gage height, 6.09 ft (1.856 m); minimum daily, 612 ft^3/s (17.3 m^3/s) Dec. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1430	829	612	815	795	802	1350	1350	2850	998	948	878
2	1430	829	618	815	795	802	1350	1360	2380	998	943	888
3	1440	829	618	815	802	809	1350	1350	1740	999	938	908
4	1430	822	618	809	802	809	1340	1360	1360	997	939	947
5	1420	829	618	809	802	809	1340	1360	1390	997	937	960
6	1230	829	618	809	802	809	1340	1360	1390	993	932	960
7	1140	822	618	809	802	809	1350	1360	1230	995	928	959
8	1140	822	618	809	802	809	1340	1370	1020	986	926	960
9	1140	829	618	807	802	809	1340	1370	946	983	923	958
10	1140	836	723	804	802	809	1350	1580	950	976	923	954
11	1140	829	822	804	802	795	1350	2050	955	977	922	952
12	1140	822	822	802	802	802	1340	2390	960	969	922	952
13	1150	822	822	802	802	802	1340	2500	966	964	923	952
14	1140	829	815	801	802	809	1340	2500	969	957	922	951
15	1140	822	815	802	802	802	1350	2510	975	959	923	926
16	1130	822	822	802	802	857	1340	2680	984	953	921	879
17	1140	822	822	802	802	978	1350	2810	986	957	921	893
18	1130	815	815	801	809	1090	1350	2810	993	960	922	910
19	1130	822	815	801	809	1260	1350	2820	993	949	920	940
20	1130	822	815	802	803	1360	1350	2820	997	948	916	975
21	1130	827	815	801	802	1360	1340	2910	999	952	915	975
22	1130	818	815	801	802	1360	1350	2970	1000	949	916	975
23	1130	816	815	799	802	1360	1350	2970	1000	950	915	975
24	1120	821	815	800	802	1360	1350	2970	1000	945	917	975
25	1130	822	815	800	802	1360	1350	2970	1000	945	917	975
26	1120	696	815	799	809	1350	1350	2970	1000	945	909	975
27	1110	624	815	802	802	1350	1350	2970	1000	945	904	975
28	937	624	815	795	802	1350	1350	2960	1000	945	901	975
29	829	618	809	795	802	1350	1350	2970	1010	941	915	973
30	829	616	815	795	---	1350	1350	2970	1010	944	907	972
31	829	---	809	795	---	1350	---	2970	---	944	872	---
TOTAL	35604	23787	23417	24902	23286	32531	40400	72310	35073	29920	28537	28447
MEAN	1149	793	755	803	802	1049	1347	2333	1169	965	921	948
MAX	1440	836	822	815	809	1360	1350	2970	2850	999	948	975
MIN	829	618	612	795	795	795	1340	1350	946	941	872	878
AC-FT	70620	47180	46450	49390	46150	64530	80130	143400	69570	59350	56600	56420

CAL YR 1975 TOTAL 565422 MEAN 1604 MAX 5500 MIN 266 AC-FT 1161000
WTR YR 1976 TOTAL 398194 MEAN 1088 MAX 2970 MIN 612 AC-FT 789800

06101560 PONDERA COULEE NEAR CHESTER, MT

LOCATION.--Lat 48°16'14", long 111°08'42", in SE¼SE¼NE¼ sec.13, T.29 N., R.4 E., Liberty County, Hydrologic Unit 10030203, on left bank 75 ft (22.9 m) upstream from bridge on county road, 8.5 mi (13.7 km) upstream from mouth, and 19.0 mi (30.6 km) southwest of Chester.

DRAINAGE AREA.--598 mi^2 (1,549 km^2).

PERIOD OF RECORD.--October 1975 to September 1976.

GAGE.--Water-stage recorder. Altitude of gage is 2,940 ft (896.1 m), from topographic map.

REMARKS.--Records good except those for winter period, which are poor. Natural flow of stream affected by numerous storage reservoirs upstream and diversions for irrigation of about 1,800 acres (7.3 km^2) above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 1,950 ft^3/s (55.2 m^3/s) June 8, 1964, gage height, 12.10 ft (3.688 m) from contracted-opening measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50 ft^3/s (1.42 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Oct. 17	0400	54	1.53	4.43	1.350	May 3	1000	*68	1.93	4.42	1.347
Mar. 16	1300	ice jam		*5.79	1.765						

Minimum discharge, 0.07 ft^3/s (0.002 m^3/s) July 15, gage height, 2.84 ft (0.866 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.5	9.3	.70	2.3	14	2.0	9.4	10	4.7	21	15	6.5
2	7.5	9.0	1.0	2.1	12	1.7	9.7	27	4.0	16	8.7	6.0
3	8.1	8.1	1.6	1.8	8.0	1.5	9.4	61	3.5	12	6.8	4.5
4	8.4	8.1	3.0	1.6	5.0	1.5	8.4	51	3.7	16	12	2.2
5	8.4	7.8	2.0	1.5	3.0	2.0	7.8	36	7.4	9.0	15	1.4
6	8.1	7.8	2.0	1.3	3.6	3.0	7.4	27	8.7	5.2	24	.95
7	8.1	7.8	2.2	1.1	4.5	4.0	7.4	21	13	4.2	31	2.0
8	8.4	7.5	2.5	1.0	4.0	8.0	7.4	17	9.4	3.3	39	6.5
9	8.4	6.5	3.0	1.0	4.0	15	7.8	20	16	1.5	31	6.5
10	8.4	5.2	2.1	1.1	4.0	13	7.4	28	23	.95	31	6.8
11	15	5.7	1.5	1.2	4.0	10	6.5	21	31	.44	29	7.1
12	31	4.6	1.3	1.4	4.0	9.0	5.5	15	22	.40	30	8.1
13	31	4.6	1.2	1.2	4.0	10	5.0	11	17	.36	31	7.1
14	40	4.6	1.0	1.4	4.0	10	4.2	8.1	20	.15	24	5.0
15	46	4.6	1.4	1.5	4.0	13	3.7	6.0	18	3.3	21	3.7
16	47	4.2	1.3	3.0	4.0	15	3.7	5.2	16	22	17	4.5
17	53	3.2	1.2	6.0	3.9	20	3.7	4.2	16	17	14	4.0
18	47	3.8	1.2	10	3.7	19	3.5	2.8	10	16	13	3.5
19	43	4.2	1.5	12	3.5	18	3.3	2.2	8.7	12	12	1.4
20	42	4.0	3.0	15	5.4	17	2.8	1.4	12	11	12	4.0
21	37	3.6	3.0	20	6.0	16	2.1	1.0	17	12	13	4.0
22	33	3.4	2.8	16	7.0	15	2.2	.52	21	12	16	4.7
23	29	3.4	2.6	14	6.0	14	2.1	1.3	23	18	14	11
24	27	3.2	2.7	12	5.0	13	2.1	1.5	30	18	13	14
25	22	2.9	2.7	10	4.0	13	3.3	.52	37	16	12	15
26	18	2.4	2.7	15	3.6	12	6.0	.67	38	16	12	19
27	16	2.1	2.7	19	3.0	12	6.3	.52	38	14	10	16
28	15	1.9	2.5	18	2.8	11	6.3	.36	39	8.4	8.7	13
29	14	1.1	2.7	17	2.5	11	6.5	1.1	35	16	6.8	14
30	12	.60	2.8	17	---	10	7.8	2.8	28	19	6.8	12
31	9.9	---	2.9	16	---	9.4	---	3.5	---	20	6.5	---
TOTAL	709.2	145.20	64.60	241.5	142.5	329.1	168.7	388.69	570.1	341.20	535.3	214.45
MEAN	22.9	4.84	2.08	7.79	4.91	10.6	5.62	12.5	19.0	11.0	17.3	7.15
MAX	53	9.3	3.0	20	14	20	9.7	61	39	22	39	19
MIN	7.5	.60	.70	1.0	2.5	1.5	2.1	.36	3.5	.15	6.5	.95
AC-FT	1410	288	128	479	283	653	335	771	1130	677	1060	425

WTR YR 1976 TOTAL 3850.54 MEAN 10.5 MAX 61 MIN .15 AC-FT 7640

06108000 TETON RIVER NEAR DUTTON, MT

LOCATION.--Lat 47°55'45", long 111°33'12", near center of south line of SW¼ sec.12, T.25 N., R.1 E., Teton County, Hydrologic Unit 10030205, on right bank 1,500 ft (457 m) upstream from Kerr Bridge, 0.9 mi (1.4 km) downstream from Hunt Coulee, and 9.5 mi (15.3 km) northeast of Dutton.

DRAINAGE AREA.--1,307 mi^2 (3,385 km^2). Area at site used prior to July 17, 1965, 1,308 mi^2 (3,388 km^2).

PERIOD OF RECORD.--August 1954 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,235 ft (986 m), from topographic map. Prior to July 17, 1965, water-stage recorder at site 1,800 ft (549 m) downstream at datum 1.97 ft (0.600 m) lower.

REMARKS.--Records good except those for winter period, which are poor. Water is diverted on left bank in sec.34, T.25 N., R.7 W., for storage in Bynum Reservoir (usable capacity, 75,000 acre-ft or 92.5 hm^3). Diversions for irrigation of about 44,000 acres (178 km^2) above station.

AVERAGE DISCHARGE.--22 years, 170 ft^3/s (4.814 m^3/s), 123,200 acre-ft/yr (152 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 71,300 ft^3/s (2,020 m^3/s) June 9, 1964, gage height, 20.48 ft (6.242 m), present site and datum, from floodmark, from slope-area measurement of peak flow; minimum discharge, 5.0 ft^3/s (0.142 m^3/s) Oct. 12, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,730 ft^3/s (49.0 m^3/s) May 6, gage height, 5.47 ft (1.667 m); minimum, 73 ft^3/s (2.07 m^3/s) Oct. 4, gage height, 1.67 ft (0.509 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100	251	140	130	210	140	196	1070	468	233	116	115
2	101	260	200	120	210	120	200	1230	446	222	111	110
3	101	255	250	120	200	110	204	1260	410	211	113	113
4	96	243	280	120	200	140	206	1120	367	203	190	114
5	96	217	300	130	150	170	206	1150	327	200	206	97
6	97	205	310	120	160	200	209	1660	267	196	281	92
7	110	191	300	110	180	220	218	1410	298	183	266	90
8	121	177	290	120	200	250	212	1040	303	173	257	90
9	127	166	280	130	200	270	201	879	390	160	296	96
10	146	165	250	140	200	300	195	830	373	156	297	99
11	154	127	190	140	200	290	191	869	361	147	243	87
12	160	169	180	130	190	290	187	981	361	167	219	79
13	198	196	170	120	200	350	185	971	370	282	199	78
14	313	196	190	120	200	510	183	884	327	338	190	82
15	496	175	200	130	200	556	176	1170	295	255	179	85
16	414	173	190	150	190	543	165	1300	276	194	168	90
17	309	165	200	190	190	496	160	1180	273	165	168	93
18	251	157	190	250	190	747	159	1080	261	165	164	105
19	212	140	190	260	180	797	154	1050	292	156	157	133
20	194	140	180	230	160	558	148	992	276	158	156	146
21	181	140	180	230	170	334	141	839	263	162	143	136
22	182	150	170	210	170	288	137	751	273	152	125	131
23	200	160	170	190	170	293	134	709	304	137	114	122
24	219	160	170	180	180	258	131	695	339	125	115	117
25	222	160	170	170	170	241	139	713	342	119	136	111
26	221	150	170	170	160	221	166	805	309	110	148	117
27	222	150	160	180	160	214	208	727	309	107	148	120
28	236	150	160	210	150	216	236	632	287	114	148	113
29	224	150	160	230	150	213	521	578	260	122	147	109
30	229	130	150	220	---	204	844	570	248	128	140	102
31	248	---	140	220	---	200	---	528	---	123	129	---
TOTAL	6182	5270	6280	5170	5290	9739	6412	29673	9815	5363	5469	3172
MEAN	199	176	203	167	182	314	214	957	327	174	176	106
MAX	496	260	310	260	210	797	844	1660	468	338	297	146
MIN	96	127	140	110	150	110	131	528	248	107	111	78
AC-FT	12260	10450	12460	10250	10490	19320	12720	58860	19470	10660	10850	6290

CAL YR 1975 TOTAL 132833 MEAN 364 MAX 11600 MIN 20 AC-FT 263500
WTR YR 1976 TOTAL 97855 MEAN 267 MAX 1660 MIN 78 AC-FT 194100

06109500 MISSOURI RIVER AT VIRGELLE, MT

LOCATION.--Lat 48°00'14", long 110°15'19", in SW¼SW¼SE¼ sec.13, T.26 N., R.11 E., Chouteau County, Hydrologic Unit 10040101, on left bank 0.2 mi (0.3 km) upstream from Virgelle ferry, 0.6 mi (1.0 km) southwest of Virgelle, 3.4 mi (5.5 km) downstream from Spring Coulee, and at mile 2,032.6 (3,270.5 km).

DRAINAGE AREA.--34,379 mi^2 (89,042 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1935 to current year. Prior to October 1953, published as "at Loma."

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,507.50 ft (764.286 m) above mean sea level. Prior to Sept. 30, 1953, water-stage recorder at Loma, 18 mi (29 km) upstream, at datum 2,543.40 ft (775.228 m) above mean sea level.

REMARKS.--Water-discharge records excellent except those for winter period, which are good. Flow regulated by 23 smaller irrigation reservoirs and powerplants (see p.577), Clark Canyon Reservoir (see p.37), Canyon Ferry Reservoir (see p.69), and Tiber Reservoir (see p.102). Diversions for irrigation of about 850,400 acres (3,440 km^2) above station.

AVERAGE DISCHARGE.--41 years, 8,625 ft^3/s (244.3 m^3/s), 6,249,000 acre-ft/yr (7.71 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 122,000 ft^3/s (3,460 m^3/s) June 5, 1953, gage height, 23.4 ft (7.13 m), from floodmark, from rating curve for former site at Loma extended above 66,000 ft^3/s (1,870 m^3/s), adjusted to present site; minimum daily, 638 ft^3/s (18.1 m^3/s) July 5, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1908 reached a stage about 2 ft (0.61 m) higher than that of June 5, 1953, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 34,700 ft^3/s (983 m^3/s) May 16, gage height, 10.76 ft (3.280 m); maximum gage height, 10.87 ft (3.313 m) Jan. 18 (backwater from ice); minimum daily discharge, 4,310 ft^3/s (122 m^3/s) Jan. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9430	11700	8590	8440	9180	7860	11500	19700	24700	21000	8270	8210
2	9220	11800	10700	7170	8960	4930	11600	20500	24300	20700	8500	8100
3	9840	10900	10500	4310	9080	4500	11800	22000	23800	18900	9150	8300
4	8190	11000	11700	5980	9820	6180	11800	23600	22600	16000	9400	8660
5	9600	11000	12800	8260	8460	8720	11800	24800	22600	16000	9570	8470
6	9870	11000	11600	9000	6540	10300	13100	28800	22500	16000	9590	8450
7	9790	11400	11300	8800	6330	10800	10300	31100	23000	14500	9590	8290
8	9030	11600	11500	6200	7070	11100	12000	31100	22500	14300	9380	8810
9	8500	11500	11500	7600	8820	10800	12500	30000	22500	12600	9300	8090
10	8780	11400	11300	7600	10100	11300	12800	29400	20700	11700	9560	8550
11	8190	11300	11000	8000	10200	10800	12900	29800	19000	11800	9580	8400
12	8510	11200	10800	6800	9910	10100	13100	30800	18400	11700	9170	8360
13	9130	10800	11700	9400	9850	9710	13500	31500	18500	10600	9150	8420
14	10100	11000	11500	9400	10100	9830	13500	31500	18400	11100	9150	8960
15	9460	11100	11400	9370	9280	10300	13900	31400	18200	9260	8970	8580
16	9570	11100	11900	9830	8970	10600	14200	34000	17800	9660	8910	7890
17	9770	10700	12100	10300	8880	11000	15600	33500	17600	9290	8680	8390
18	9970	10900	11300	11000	8920	12300	17600	31600	17800	9270	8490	8980
19	9880	11000	11500	11100	8900	13000	18600	30900	17700	9060	8950	8450
20	9800	10900	11600	10600	8820	13400	18200	30500	17300	9290	8570	8560
21	9940	9420	11900	10000	8660	12900	17500	29600	17100	9240	8500	8960
22	9300	9760	11300	9800	8630	12500	17300	28800	16900	9240	8400	9040
23	9620	9960	10900	10000	8760	12200	17300	28200	17400	9080	8520	8860
24	10000	10000	9270	9800	8930	12000	17400	27500	18100	8970	9120	9350
25	9760	10200	9320	9800	8780	11900	17400	27400	19100	8660	9070	8140
26	9850	10300	9430	9500	8860	11800	17600	27600	21400	8890	8970	8560
27	10500	10200	9140	8880	8840	11800	18600	27500	23100	9050	8970	9280
28	10900	9590	9190	9800	8560	11700	18600	26300	22900	9320	8610	8420
29	10900	9370	9090	9600	8600	11700	18800	25600	22000	9150	8720	8700
30	10900	9330	9300	9270	---	11500	18900	25800	21500	8730	8670	8720
31	11900	---	9340	9290	---	11700	---	25300	---	8330	8670	---
TOTAL	300200	321430	334670	278900	256830	329230	449700	876100	609400	362410	278150	256970
MEAN	9684	10710	10800	8997	8856	10620	14990	28260	20310	11690	8973	8566
MAX	11900	11800	12800	11100	10200	13400	18900	34000	24700	21000	9590	9350
MIN	8190	9330	8590	4310	6330	4500	10300	19700	16900	8330	8270	7890
AC-FT	595400	637600	663800	553200	509400	653000	892000	1738000	1209000	718800	551700	509700

CAL YR 1975 TOTAL 5399340 MEAN 14790 MAX 68800 MIN 6000 AC-FT 10710000
WTR YR 1976 TOTAL 4653990 MEAN 12720 MAX 34000 MIN 4310 AC-FT 9231000

06109500 MISSOURI RIVER AT VIRGELLE, MT--Continued
(National Stream Quality Accounting Network)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to current year.
WATER TEMPERATURES: October 1974 to current year.

INSTRUMENTATION.--Temperature recorder since July 23, 1976.

REMARKS.--Flow regulated by 23 smaller irrigation reservoirs, powerplants and diversions for irrigation upstream from station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 658 micromhos May 2, 1976; minimum daily, 112 micromhos Mar. 4, 1975.
WATER TEMPERATURES: Maximum, 24.5°C July 26, 1976; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 658 micromhos May 2; minimum daily, 358 micromhos July 23.
WATER TEMPERATURES: Maximum, 24.5°C July 26; minimum, 0.0°C on many days during November and January to March.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	FECAL COLIFORM (COL. PER 100 ML)	FECAL STREPTOCOCCI KF AGAR (COL. PER 100 ML)
OCT											
23...	1215	9750	476	--	7.5	8.0	10	--	--	--	16
NOV											
18...	1130	10800	480	8.5	2.0	4.5	6	11.2	94	31	22
DEC											
17...	1100	12000	450	8.2	-16.0	.5	10	13.4	101	2	17
JAN											
21...	1120	10000	500	8.2	4.0	.0	10	12.5	94	14	48
FEB											
17...	1130	8320	530	8.4	7.0	2.5	7	13.2	106	1	5
MAR											
17...	1120	11400	500	8.6	17.0	5.0	10	11.3	97	<1	2
APR											
14...	1135	13200	458	8.6	18.5	11.5	10	10.5	106	4	17
MAY											
20...	1100	30400	410	8.4	19.5	13.5	70	9.1	98	36	50
JUN											
15...	0915	18400	392	8.2	20.0	14.0	25	9.2	98	120	52
JUL											
14...	1145	9780	394	8.6	23.0	20.5	25	8.7	105	96	55
AUG											
19...	1000	8710	401	8.6	20.0	18.0	10	8.7	100	120	74
SEP											
09...	0900	7840	378	8.6	15.0	14.0	10	9.3	99	120	170

DATE	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)
OCT											
23...	200	60	50	18	23	.7	3.0	169	--	--	90
NOV											
18...	180	49	45	16	21	.7	3.0	158	0	.8	76
DEC											
17...	200	45	50	18	23	.7	3.2	188	0	1.9	88
JAN											
21...	190	42	47	18	27	.9	3.4	182	0	1.8	100
FEB											
17...	200	51	49	18	23	.7	3.4	177	0	1.1	83
MAR											
17...	190	61	47	18	26	.8	3.3	159	0	.6	94
APR											
14...	180	46	44	16	21	.7	3.4	158	0	.6	74
MAY											
20...	160	12	40	14	16	.6	2.5	178	0	1.1	53
JUN											
15...	160	31	40	14	14	.5	2.7	154	0	1.6	55
JUL											
14...	160	35	42	14	18	.6	2.8	156	0	.6	70
AUG											
19...	180	50	49	15	18	.6	2.7	160	2	.7	69
SEP											
09...	150	29	36	15	18	.6	2.6	149	0	.6	54

06109500 MISSOURI RIVER AT VIRGELLE, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT											
23...	6.5	.5	12	294	.40	7740	.24	.80	1.0	.07	--
NOV											
18...	6.6	.5	13	263	.36	7670	.18	.14	.32	.04	3.8
DEC											
17...	5.9	.5	14	295	.40	9560	.29	.38	.67	.05	--
JAN											
21...	6.4	.5	13	299	.41	8070	.41	.38	.79	.04	--
FEB											
17...	7.3	.6	13	301	.41	6760	.33	.28	.61	.02	2.1
MAR											
17...	8.0	.7	14	301	.41	9270	.19	.48	.67	.03	--
APR											
14...	7.3	.7	14	265	.36	9450	.02	.96	.98	.14	--
MAY											
20...	6.9	.6	14	231	.31	19000	.14	.73	.87	.16	--
JUN											
15...	7.9	.6	15	250	.34	12400	.20	.53	.73	.09	3.1
JUL											
14...	6.3	.6	12	244	.33	6440	.01	.02	.03	.07	--
AUG											
19...	6.3	.5	10	249	.34	5860	.01	.00	.01	.06	--
SEP											
09...	5.7	.5	12	239	.33	5060	.00	.49	.49	.08	4.2

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
NOV												
18...	1130	17	17	0	0	10	10	100	0	30	8	880
FEB												
17...	1130	13	13	<10	0	0	0	<50	1	20	7	440
JUN												
15...	0915	9	9	1	0	10	<10	0	0	20	10	1100
SEP												
09...	0900	11	9	<10	0	10	0	<50	0	30	5	530

DATE	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
NOV											
18...	0	<100	3	70	10	.0	.0	0	0	40	10
FEB											
17...	0	<100	2	20	0	.1	.1	1	0	10	0
JUN											
15...	10	8	0	40	0	<.5	<.5	0	0	20	0
SEP											
09...	20	<100	1	30	0	.0	.0	0	0	50	10

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TOTAL ATRA-ZINE (UG/L)	ATRA-ZINE IN BOTTOM MATERI-AL (UG/KG DRY SOLIDS)	TOTAL ALDRIN (UG/L)	ALDRIN IN BOTTOM MA-TERIAL (UG/KG)	TOTAL CHLOR-DANE (UG/L)	CHLOR-DANE IN BOTTOM MA-TERIAL (UG/KG)	TOTAL DDD (UG/L)	DDD IN BOTTOM MA-TERIAL (UG/KG)	TOTAL DDE (UG/L)	DDE IN BOTTOM MA-TERIAL (UG/KG)	TOTAL DDT (UG/L)
NOV												
18...	1130	ND	--	ND	--	ND	--	ND	--	ND	--	ND
FEB												
17...	1130	ND	--	ND	--	ND	--	ND	--	ND	--	ND
MAY												
20...	1100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG												
19...	1000	ND	--	ND	--	ND	--	ND	--	ND	--	ND

06109500 MISSOURI RIVER AT VIRGELLE, MT--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DDT IN BOTTOM MATERIAL (UG/KG)	TOTAL DIAZINON (UG/L)	DIAZINON IN BOTTOM MATERIAL (UG/KG)	TOTAL DIELDRIN (UG/L)	DIELDRIN IN BOTTOM MATERIAL (UG/KG)	TOTAL ENDRIN (UG/L)	ENDRIN IN BOTTOM MATERIAL (UG/KG)	TOTAL ETHION (UG/L)	ETHION IN BOTTOM MATERIAL (UG/KG)	TOTAL HEPTACHLOR (UG/L)	HEPTACHLOR IN BOTTOM MATERIAL (UG/KG)	TOTAL HEPTACHLOR EPOXIDE (UG/L)
NOV 18...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND
FEB 17...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND
MAY 20...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG 19...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	HEPTACHLOR EPOXIDE IN BOTTOM MATERIAL (UG/KG)	TOTAL LINDANE (UG/L)	LINDANE IN BOTTOM MATERIAL (UG/KG)	TOTAL MALATHION (UG/L)	MALATHION IN BOTTOM MATERIAL (UG/KG)	TOTAL METHOXYCHLOR (UG/L)	METHOXYCHLOR IN BOTTOM MATERIAL (UG/KG)	TOTAL METHYL PARATHION (UG/L)	METHYL PARATHION IN BOTTOM MATERIAL (UG/KG)	TOTAL METHYL TRITHION (UG/L)	METHYL TRITHION IN BOTTOM MATERIAL (UG/KG)	TOTAL PARATHION (UG/L)
NOV 18...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND
FEB 17...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND
MAY 20...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG 19...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	PARATHION IN BOTTOM MATERIAL (UG/KG)	TOTAL TOXAPHENE (UG/L)	TOXAPHENE IN BOTTOM MATERIAL (UG/KG)	TOTAL TRITHION (UG/L)	TRITHION IN BOTTOM MATERIAL (UG/KG)	SIMAZINE IN BOTTOM MATERIAL (UG/KG DRY SOLIDS)	TOTAL 2,4-D (UG/L)	2,4-D IN BOTTOM MATERIAL (UG/KG)	TOTAL 2,4,5-T (UG/L)	2,4,5-T IN BOTTOM MATERIAL (UG/KG)	TOTAL SILVEX (UG/L)
NOV 18...	--	ND	--	ND	--	--	ND	--	ND	--	ND
FEB 17...	--	ND	--	ND	--	--	ND	--	ND	--	ND
MAY 20...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG 19...	--	ND	--	ND	--	--	ND	--	ND	--	ND

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .062 MM
OCT 23...	1215	8.0	9750	35	921	55
NOV 18...	1130	4.5	10800	29	846	53
FEB 17...	1130	2.5	8320	32	719	41
MAR 17...	1130	5.0	11400	74	2280	55
APR 14...	1135	11.5	13200	76	2710	56
MAY 20...	1100	13.5	30400	267	21900	75
JUN 15...	0915	14.0	18400	91	4520	71
JUL 14...	1145	20.5	9780	74	1950	82
AUG 19...	1000	18.0	8710	37	870	68
SEP 09...	0900	14.0	7840	22	466	84

06109500 MISSOURI RIVER AT VIRGELLE, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	420	458		---	480	473	467	564	404	361	410	408
2	425	467		---	488	467	465	658	407	358	409	402
3	420	468		546	483	500	470	631	408	358	408	402
4	420	463		551	483	492	---	548	409	371	406	400
5	429	463		484	503	492	470	502	394	365	418	396
6	425	461		479	511	478	461	476	404	365	400	396
7	415	452		473	489	456	472	459	438	368	404	394
8	417	441		484	490	463	471	452	423	361	423	396
9	425	440		520	490	470	467	448	416	368	418	392
10	432	438		511	472	490	462	439	418	375	417	394
11	441	439		478	478	474	456	420	411	381	426	394
12	452	437		460	467	467	450	417	406	375	439	396
13	463	435		482	467	478	450	418	408	386	413	400
14	483	435		459	462	500	450	414	398	380	412	393
15	490	449		475	469	498	447	419	400	397	412	392
16	535	451		451	478	499	443	419	399	410	409	391
17	600	448		450	481	499	446	395	399	406	408	391
18	589	448		476	476	509	438	403	431	403	407	388
19	570	447		485	479	515	431	405	410	405	---	391
20	525	435		447	479	510	429	400	405	403	---	389
21	494	417		471	479	499	431	400	399	398	---	393
22	487	417		500	476	499	432	402	397	404	---	402
23	488	423		511	472	486	431	406	399	400	---	402
24	472	429		508	470	481	433	407	399	398	---	400
25	467	429		485	480	474	431	409	408	400	---	398
26	489	431		499	480	476	437	408	392	399	---	400
27	493	436		446	478	470	448	404	381	394	394	399
28	484	436		481	474	469	445	409	378	395	400	399
29	475	433		479	464	467	463	408	376	395	399	405
30	470	444		480	---	463	511	407	371	384	400	408
31	470	---		476	---	463	---	409	---	389	401	---
MONTH	473	442		484	479	483	452	444	403	386	---	397

YEAR MAX 658 MIN 358 MEAN 442

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.0	7.0		---	1.5	0.0	6.0	9.5	15.0	19.0	22.0	20.0
2	13.0	8.0		---	1.0	0.0	5.0	10.0	15.0	19.0	20.0	20.0
3	13.0	8.5		0.0	0.5	0.0	5.0	10.0	16.0	19.0	21.0	19.0
4	13.5	9.0		0.0	0.0	0.0	---	12.0	14.0	21.0	22.0	20.0
5	12.0	8.5		0.0	0.0	0.0	7.0	11.0	15.0	20.0	21.0	19.0
6	13.0	8.0		0.0	0.0	0.0	8.0	11.0	15.5	20.0	21.0	19.0
7	12.5	8.0		0.0	0.0	0.0	9.5	10.0	15.0	21.0	20.0	16.0
8	11.0	6.5		0.0	0.0	0.0	10.0	11.0	15.0	21.0	19.5	15.0
9	10.0	5.5		0.0	1.0	2.0	11.0	11.5	15.5	22.0	20.0	15.0
10	9.5	4.0		0.0	0.5	2.0	11.0	12.0	16.0	21.0	19.5	15.0
11	10.0	3.5		0.0	1.0	1.5	11.0	14.0	17.0	21.0	19.0	15.0
12	9.5	3.5		0.0	1.0	0.0	12.0	12.0	17.5	21.0	20.0	16.0
13	9.5	4.0		0.0	0.5	1.0	11.5	12.0	15.5	20.0	21.0	15.0
14	9.0	5.0		0.0	0.5	0.5	11.0	12.0	14.5	20.0	20.0	15.0
15	9.0	6.0		0.0	0.5	1.0	11.0	12.0	15.0	19.0	21.0	16.0
16	8.5	6.0		0.0	1.0	2.0	9.5	12.0	15.0	20.0	20.0	16.0
17	9.0	5.0		0.0	1.0	4.0	9.0	11.0	14.5	21.0	19.0	17.0
18	10.0	4.0		0.0	0.5	5.5	9.0	12.5	14.0	22.0	19.0	17.0
19	9.5	3.0		0.0	0.0	6.0	9.0	13.0	16.0	21.0	---	14.0
20	10.0	1.5		0.0	0.0	5.0	8.5	13.0	18.0	21.0	---	13.5
21	10.0	1.5		0.0	0.0	4.5	8.0	13.0	18.0	21.0	---	14.5
22	8.5	1.0		0.0	1.0	4.0	8.0	13.5	18.0	21.0	---	15.0
23	7.5	1.0		0.0	1.0	5.0	8.0	14.0	16.0	21.0	---	15.0
24	7.0	0.5		0.0	1.0	4.0	8.5	14.0	14.5	22.0	---	15.5
25	6.0	0.0		0.0	2.0	4.5	9.0	15.0	14.5	22.0	---	16.0
26	6.0	0.0		0.0	2.0	3.5	8.0	13.5	14.0	22.0	---	16.0
27	5.5	0.0		0.0	2.0	5.0	7.0	14.0	14.5	21.0	17.0	15.0
28	5.0	0.0		0.0	0.5	4.0	6.5	15.0	15.5	21.0	17.0	14.5
29	5.0	0.0		1.5	0.0	4.5	6.0	14.0	16.0	22.0	18.0	14.5
30	6.0	0.0		1.0	---	5.0	7.0	15.0	17.0	21.0	19.0	15.0
31	7.0	---		1.0	---	6.0	---	15.0	---	20.0	20.0	---
MONTH	9.5	4.0		0.0	0.5	2.5	8.5	12.5	15.5	20.5	---	16.0

YEAR MAX 22.0 MIN 0.0 MEAN 10.0

06109500 MISSOURI RIVER AT VIRGELLE, MT--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	JUNE			JULY			AUGUST			SEPTEMBER		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1				---	---	---	23.0	21.0	22.0	21.0	18.5	19.5
2				---	---	---	22.0	20.0	21.0	21.0	19.0	20.0
3				---	---	---	24.0	21.0	22.5	21.0	18.5	19.5
4				---	---	---	22.5	21.5	22.0	21.0	18.5	20.0
5				---	---	---	23.0	20.5	21.5	21.0	18.5	19.5
6				---	---	---	23.0	20.5	21.5	19.5	17.0	19.0
7				---	---	---	22.0	20.5	21.0	17.0	15.0	15.5
8				---	---	---	21.5	19.0	20.0	17.0	14.5	15.5
9				---	---	---	20.5	19.5	20.0	17.5	14.5	16.0
10				---	---	---	19.5	18.5	19.0	17.5	14.5	16.0
11				---	---	---	21.5	18.5	20.0	16.5	15.0	16.0
12				---	---	---	22.0	19.5	21.0	17.0	15.5	16.0
13				---	---	---	21.5	20.0	21.0	17.5	14.5	16.0
14				---	---	---	22.0	19.5	21.0	18.0	15.5	16.5
15				---	---	---	22.0	19.5	21.0	18.0	15.0	16.5
16				---	---	---	21.0	19.5	20.5	18.0	15.5	17.0
17				---	---	---	20.0	18.5	19.0	19.5	17.0	18.0
18				---	---	---	20.0	18.0	19.0	18.0	16.0	17.0
19				---	---	---	20.0	18.0	19.0	16.5	14.5	15.5
20				---	---	---	20.0	18.5	19.0	16.5	14.0	15.5
21				---	---	---	20.0	17.0	18.5	17.0	14.0	15.5
22				---	---	---	21.5	18.5	20.0	17.0	14.5	15.5
23				23.5	21.0	22.5	20.5	19.5	20.0	16.5	14.5	15.5
24				24.0	21.5	22.5	21.5	19.0	20.0	17.0	15.0	16.0
25				23.5	20.5	22.0	22.5	20.0	21.0	17.0	15.5	16.5
26				24.5	21.5	23.0	21.0	17.5	19.5	17.5	15.5	16.5
27				23.0	20.5	22.0	17.5	16.0	17.0	16.5	14.5	15.5
28				23.0	20.5	21.5	19.0	16.5	17.5	16.5	14.0	15.5
29				23.5	20.5	22.0	20.0	17.0	18.5	17.0	14.0	15.5
30				22.5	20.5	21.0	21.0	18.0	19.5	16.5	14.5	16.0
31				23.5	20.0	21.5	21.0	18.5	19.5	---	---	---
MONTH				---	---	---	24.0	16.0	20.0	21.0	14.0	17.0
YEAR	24.5	14.0	19.0									

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON

Date	Length of exposure (days)	Biomass (g/m^2) Dry weight	Ash weight	Chlorophyll a (mg/m^2)	Chlorophyll b (mg/m^2)	Biomass pigment ratio	Sampling method
Aug 19	36	7.92	5.00	--	--	--	Polyethylene strip
Sep 9	21	4.77	3.92	3.23	.135	260	

PHYTOPLANKTON
OCT. 23, 1975
1215 HOURS
4,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...SCENEDESMACEAE				
	....CRUCIGENIA		400	10	
L	....SCENEDESMUS			0	
		TOTALS	400	10	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		640	16	
	....MELOSIRA		120	3	

06109500 MISSOURI RIVER AT VIRGELLE, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

CCT. 23, 1975--CONTINUED

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		250	6	
	....RHOICOSPHENIA		25	1	
	...CYMBELLACEAE				
	....CYMBELLA		150	4	
	...DIATOMACEAE				
	....DIATOMA		99	2	
	...FRAGILARIACEAE				
	....ASTERIONELLA		49	1	
	....SYNEDRA		25	1	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		74	2	
	...NAVICULACEAE	NAVICULOID			
O	....NAVICULA		790	20	
	...NITZSCHIACEAE				
O	....NITZSCHIA		620	16	
		TOTALS	2,800	72	2.729=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
D	....OSCILLATORIA		740	19	
		TOTALS	740	19	0.000=DIVERSITY

PHYL/DIV 1.129
CLASS 1.129
ORDER 1.730
FAMILY 2.909
GENERA 3.079

NOV. 18, 1975
1130 HOURS

2,500 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT
	CHRYSOPHYTA			
	.BACILLARIOPHYCEAE	DIATOMS		
	..CENTRALES	CENTRIC		
	...COSCINODISCACEAE			
D	....CYCLOTELLA		1,600	64
	....MELOSIRA		270	11
	..PENNALES	PENNATE		
	...ACHNANTHACEAE			
	....ACHNANTHES		91	4
L	....COCCONEIS			0
	...DIATOMACEAE			
	....DIATOMA		91	4
	...FRAGILARIACEAE			
L	....FRAGILARIA			0
L	....SYNEDRA			0
	...GOMPHONEMATACEAE			
	....GOMPHONEMA		91	4
	...NAVICULACEAE	NAVICULOID		
	....NAVICULA		91	4
	...NITZSCHIACEAE			
	....NITZSCHIA		270	11
		TOTALS	2,500	102	1.787=DIVERSITY

ORDER 0.811
FAMILY 1.343
GENERA 1.787

06109500 MISSOURI RIVER AT VIRGELLE, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
DEC. 17, 1975
1100 HOURS
400 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		100	25	
L	....MELOSIRA			0	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
L	....RHOICOSPHENIA			0	
	...CYMBELLACEAE				
	....CYMBELLA		25	6	
	...DIATOMACEAE				
	....DIATOMA		12	3	
	...FRAGILARIACEAE				
	....FRAGILARIA		50	13	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		37	9	
	...NAVICULACEAE	NAVICULOID			
L	....CALONEIS			0	
D	....NAVICULA		87	22	
	...NITZSCHIACEAE				
D	....NITZSCHIA		75	19	
	...SURIRELLACEAE				
L	....CYMATOPLEURA			0	
	....SURIRELLA		12	3	
		TOTALS	400	100	2.690=DIVERSITY

ORDER 0.811
FAMILY 2.690
GENERA 2.690

JAN. 21, 1976
1120 HOURS
680 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...SCENEDESMACEAE				
L	....SCENEDESMUS			0	
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
L	....CHLAMYDOMONAS			0	
	...VOLVOCACEAE				
L	....PANDORINA			0	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		310	46	
	....MELOSIRA		57	8	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....RHOICOSPHENIA		29	4	
	...CYMBELLACEAE				
L	....CYMBELLA			0	
	...DIATOMACEAE				
	....DIATOMA		57	8	
	...FRAGILARIACEAE				
L	....ASTERIONELLA			0	
	....FRAGILARIA		29	4	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		29	4	
	...NAVICULACEAE	NAVICULOID			
L	....AMPHIPLEURA			0	
L	....CALONEIS			0	
	....NAVICULA		86	12	
	...NITZSCHIACEAE				
	....NITZSCHIA		57	8	
	...SURIRELLACEAE				
	....SURIRELLA		29	4	
		TOTALS	680	98	2.551=DIVERSITY

06109500 MISSOURI RIVER AT VIRGELLE, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

JAN.21, 1976--CONTINUED

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT
	CYANOPHYTA	BLUE-GREEN ALGAE		
	.MYXOPHYCEAE			
	..OSCILLATORIALES	FILAMENTOUS		
	...OSCILLATORIACEAE			
L	....OSCILLATORIA			0

ORDER 0.995
FAMILY 2.216
GENERA 2.551

FEB. 17, 1976
1130 HOURS
1,200 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...CHAPACIACEAE				
	....SCHROEDERIA		33	3	
		TOTALS	33	3	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		200	17	
	....MELOSIRA		67	6	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....RHOICOSPHENIA		33	3	
	...CYMBELLACEAE				
	....CYMBELLA		33	3	
	...DIATOMACEAE				
	....DIATOMA		33	3	
	...FRAGILARIACEAE				
	....ASTERIONELLA		170	14	
	....FRAGILARIA		33	3	
	....SYNEDRA		33	3	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		67	6	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		470	40	
		TOTALS	1,100	98	2.604=DIVERSITY

PHYL/DIV 0.187
CLASS 0.187
ORDER 0.952
FAMILY 2.302
GENERA 2.717

MAR. 17, 1976
1130 HOURS
4,600 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT
	CHRYSOPHYTA			
	.BACILLARIOPHYCEAE	DIATOMS		
	..CENTRALES	CENTRIC		
	...COSCINODISCACEAE			
D	....CYCLOTELLA		3,900	86
L	....MELOSIRA			0
	..PENNALES	PENNATE		
	...ACHNANTHACEAE			
	....RHOICOSPHENIA		59	1
	...CYMBELLACEAE			
L	....CYMBELLA			0
	...DIATOMACEAE			
	....DIATOMA		59	1
	...FRAGILARIACEAE			
L	....ASTERIONELLA			0
L	....SYNEDRA			0
	...GOMPHONEMATACEAE			
	....GOMPHONEMA		180	4
	...NAVICULACEAE	NAVICULOID		
	....NAVICULA		180	4
L	....PINNULARIA			0
	...NITZSCHIACEAE			
	....NITZSCHIA		120	3
	...SURIRELLACEAE			
	....SURIRELLA		59	1
		TOTALS	4,600	100	0.927=DIVERSITY

ORDER 0.587
FAMILY 0.927
GENERA 0.927

06109500 MISSOURI RIVER AT VIRGELLE, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
APR. 14, 1976
1135 HOURS
18,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...SCENEDESMACEAE				
L	....SCENEDESMUS			0	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		15,000	86	
L	....MELOSIRA			0	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		170	1	
L	....RHOICOSPHENIA			0	
	...CYMBELLACEAE				
L	....EPITHEMIA			0	
	...DIATOMACEAE				
	....DIATOMA		170	1	
	...FRAGILARIACEAE				
L	....ASTERIONELLA			0	
	....FRAGILARIA		350	2	
	....SYNEDRA		170	1	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		350	2	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		1,200	7	
L	....PINNULARIA			0	
	...NITZSCHIACEAE				
L	....NITZSCHIA			0	
	...SURIRELLACEAE				
L	....CYMATOPLEURA			0	
L	....SURIRELLA			0	
		TOTALS	18,000	100	0.868=DIVERSITY

ORDER 0.577
FAMILY 0.841
GENERA 0.868

MAY 20, 1976
1100 HOURS
1,200 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		48	4	
	....KIRCHNERIELLA		24	2	
	...SCENEDESMACEAE				
D	....SCENEDESMUS		190	16	
		TOTALS	270	22	1.096=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		120	10	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		24	2	
	...CYMBELLACEAE				
	....CYMBELLA		24	2	
	...FRAGILARIACEAE				
D	....ASTERIONELLA		510	42	
	....SYNEDRA		24	2	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		120	10	
	...NITZSCHIACEAE				
	....NITZSCHIA		120	10	
		TOTALS	940	78	2.027=DIVERSITY

PHYL/DIV 0.760
CLASS 0.760
ORDER 1.191
FAMILY 2.410
GENERA 2.583

06109500 MISSOURI RIVER AT VIRGELLE, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
JUNE 15, 1976
0915 HOURS
1,600 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		180	12	
	....KIRCHNERIELLA		73	5	
	....TETRAEDRON		37	2	
		TOTALS	290	19	1.299=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...FRAGILARIACEAE				
	....H.ARCUS		37	2	
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
O	....CYCLOTELLA		730	47	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		37	2	
	...CYMBELLACEAE				
	....CYMBELLA		37	2	
	...DIATOMACEAE				
L	....DIATOMA			0	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		37	2	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		73	5	
	....PINNULARIA		37	2	
	...NITZSCHIACEAE				
	....NITZSCHIA		220	14	
	...SURIRELLACEAE				
	....SURIRELLA		37	2	
		TOTALS	1,200	78	2.030=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
	..CHRYSOMONADALES				
	...OCHROMONADACEAE				
	....OCHROMONAS		37	2	
		TOTALS	37	2	0.000=DIVERSITY

CLASS 0.845
ORDER 1.739
FAMILY 2.387
GENERA 2.692

JULY 14, 1976
1145 HOURS
82,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...MICRACTINIACEAE				
	....MICRACTINIUM		990	1	
	...OOCYSTACEAE				
	....ANKISTRODESMUS		490	1	
	....OICTYOSPHAERIUM		4,000	5	
L	....TETRAEDRON			0	
	...SCENEDESMACEAE				
	....ACTINASTRUM		660	1	
	....CRUCIGENIA		660	1	
		TOTALS	6,900	9	1.909=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		31,000	37	
D	....MELOSIRA		43,000	53	
L	....STEPHANODISCUS			0	

06109500 MISSOURI RIVER AT VIRGELLE, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

JUNE 15, 1976--CONTINUED

ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
..PENNALES	PENNATE			
...DIATOMACEAE				
....DIATOMA		490	1	
...FRAGILARIACEAE				
L ....SYNEDRA			0	
...NAVICULACEAE	NAVICULOID			
L ....NAVICULA			0	
...NITZSCHIACEAE				
L ....NITZSCHIA			0	
	TOTALS	75,000	91	1.126=DIVERSITY

PHYL/DIV 0.416
CLASS 0.416
ORDER 0.521
FAMILY 0.651
GENERA 1.608

AUG. 19, 1976
1000 HOURS
28,000 CELLS/ML

ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
CHLOROPHYTA	GREEN ALGAE			
.CHLOROPHYCEAE				
..CHLOROCOCCALES				
...CHARACIACEAE				
L ....SCHROEDERIA			0	
...HYDRODICTYACEAE				
L ....PEDIASTRUM			0	
...OOCYSTACEAE				
....ANKISTRODESMUS		790	3	
L ....DICTYOSPHAERIUM			0	
...SCENEDESMACEAE				
....SCENEDESMUS		790	3	
..VOLVOCALES				
...VOLVOCACEAE				
L ....PANDORINA			0	
	TOTALS	1,600	6	1.000=DIVERSITY
CHRYSOPHYTA				
.BACILLARIOPHYCEAE	DIATOMS			
..CENTRALES	CENTRIC			
...COSCINODISCACEAE				
....CYCLOTELLA		790	3	
....MELOSIRA		3,200	11	
L ....STEPHANODISCUS			0	
..PENNALES	PENNATE			
...ACHNANTHACEAE				
....COCCONEIS		200	1	
....RHOICOSPHENIA		400	1	
...CYMBELLACEAE				
L ....CYMBELLA			0	
...DIATOMACEAE				
....DIATOMA		400	1	
...FRAGILARIACEAE				
L ....ASTERIONELLA			0	
D ....FRAGILARIA		17,000	61	
....SYNEDRA		990	4	
...GOMPHONEMATACEAE				
....GOMPHONEMA		200	1	
...NAVICULACEAE	NAVICULOID			
....NAVICULA		1,600	6	
...NITZSCHIACEAE				
....NITZSCHIA		1,400	5	
...SURIRELLACEAE				
....SURIRELLA		200	1	
	TOTALS	26,000	95	1.913=DIVERSITY
CYANOPHYTA	BLUE-GREEN ALGAE			
.MYXOPHYCEAE				
..CHROOCOCCALES	COCCOID			
...CHRODCOCCACEAE				
L ....GOMPHOSPHAERIA			0	
..OSCILLATORIALES	FILAMENTOUS			
...NOSTOCACEAE				
L ....ANABAENA			0	

PHYL/DIV 0.314
CLASS 0.314
ORDER 0.890
FAMILY 1.855
GENERA 2.176

06109500 MISSOURI RIVER AT VIRGELLE, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
SEP. 9, 1976
0900 HOURS
4,100 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....MELOSIRA		480	12	
	....STEPHANODISCUS		40	1	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		80	2	
	...FRAGILARIACEAE				
D	....FRAGILARIA		2,700	67	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		40	1	
	...NAVICULACEAE	NAVICULOID			
	....CALONEIS		40	1	
	....NAVICULA		200	5	
	...NITZSCHIACEAE				
	....NITZSCHIA		40	1	
		TOTALS	3,600	90	1.337=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..CHROOCOCCALES	COCCOID			
	...CHROOCOCCACEAE				
	....ANACYSTIS		400	10	
		TOTALS	400	10	0.000=DIVERSITY
	PYRRHOPHYTA	FIRE ALGAE			
	.DINOPHYCEAE	DINOFLAGELLATES			
	..PERIDINIALES				
	...PERIDINIACEAE				
	....PERIDINIUM		40	1	
		TOTALS	40	1	0.000=DIVERSITY

PHYL/DIV 0.541
CLASS 0.541
ORDER 1.069
FAMILY 1.645
GENERA 1.733

06109780 MIDDLE FORK JUDITH RIVER NEAR UTICA, MT

LOCATION.--Lat 46°50'56", long 110°16'17", in SE¼NW¼ sec.36, T.13 N., R.11 E., Judith Basin County, Hydrologic Unit 10040103, on left bank 630 ft (192 m) upstream from confluence with South Fork, 67 ft (20 m) downstream from county highway bridge, and 12.8 mi (20.6 km) southwest of Utica.

DRAINAGE AREA.--160 mi^2 (414 km^2).

PERIOD OF RECORD.--July 1972 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,940 ft (1,506 m), from topographic map.

REMARKS.--Records good except those for winter period, which are poor. Diversions for irrigation of about 300 acres (1.21 km^2), all of which lies below station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,650 ft^3/s (46.7 m^3/s) June 20, 1975, gage height, 5.59 ft (1.744 m); maximum gage height, 6.47 ft (1.972 m) Dec. 31, 1973 (backwater from ice); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 110 ft^3/s (3.12 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 10		ice jam		*5.71	1.740	June 23	2200	253	7.16	2.73	0.832
May 21	1300	*377	10.7	3.09	0.942						

No flow part of each day for many days during winter period.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	15	4.0	1.4	4.0	.10	3.0	50	282	142	44	18
2	18	15	8.0	2.0	3.0	.40	3.5	60	268	131	53	17
3	17	15	14	2.5	2.0	1.0	2.5	80	255	123	43	16
4	17	15	15	3.0	.10	1.4	4.0	100	253	113	39	16
5	17	15	17	3.5	.20	2.0	7.0	120	240	108	38	16
6	16	15	17	3.4	1.0	2.1	11	123	233	100	37	15
7	16	14	16	3.3	2.5	2.2	14	136	221	94	35	16
8	17	13	14	3.2	4.0	2.2	17	160	212	91	37	16
9	17	12	12	3.0	3.7	2.1	20	214	202	87	34	16
10	17	12	7.0	2.8	3.0	2.0	23	252	191	84	32	15
11	17	12	5.0	2.6	3.5	1.0	30	310	186	80	32	15
12	18	12	2.5	2.6	3.5	.40	40	299	173	89	30	19
13	21	13	1.0	2.6	3.7	.80	46	286	164	80	29	17
14	19	13	.10	2.7	3.8	2.0	41	347	156	72	28	15
15	19	13	.10	2.8	3.6	.60	40	349	148	68	27	15
16	18	13	.10	3.0	2.5	2.0	37	321	146	65	26	14
17	17	12	.10	3.5	2.0	2.5	33	310	146	63	26	14
18	17	12	.10	4.0	1.0	2.5	28	340	137	63	26	14
19	17	11	.20	4.4	.20	2.2	26	349	130	65	25	14
20	16	.40	1.0	4.6	1.0	2.0	24	359	127	64	24	14
21	18	.20	2.0	4.7	2.0	2.0	22	368	128	59	23	13
22	18	.60	3.0	4.5	3.5	2.5	21	358	186	54	22	13
23	17	1.0	4.0	4.0	3.5	2.0	20	362	238	51	21	13
24	16	2.0	4.2	3.5	3.0	1.0	19	364	249	49	23	13
25	15	1.6	4.3	1.0	2.5	1.4	20	366	239	47	21	13
26	15	1.0	4.0	2.5	2.0	1.2	14	347	218	46	20	13
27	15	.80	3.5	3.0	1.0	2.0	14	328	198	43	20	13
28	15	.40	3.0	3.5	.10	1.6	14	323	179	42	20	13
29	15	.20	2.7	4.0	.10	1.6	20	322	165	41	18	13
30	15	1.0	2.5	4.3	---	1.6	40	303	151	40	18	13
31	15	---	1.0	4.5	---	2.5	---	294	---	39	18	---
TOTAL	524	261.20	168.40	100.4	66.00	50.90	654.0	8300	5821	2293	889	442
MEAN	16.9	8.71	5.43	3.24	2.28	1.64	21.8	268	194	74.0	28.7	14.7
MAX	21	15	17	4.7	4.0	2.5	46	368	282	142	53	19
MIN	15	.20	.10	1.0	.10	.10	2.5	50	127	39	18	13
AC-FT	1040	518	334	199	131	101	1300	16460	11550	4550	1760	877

CAL YR 1975 TOTAL 36459.60 MEAN 99.9 MAX 1480 MIN 0 AC-FT 72320
WTR YR 1976 TOTAL 19569.90 MEAN 53.5 MAX 368 MIN .10 AC-FT 38820

06109800 SOUTH FORK JUDITH RIVER NEAR UTICA, MT

LOCATION.--Lat 46°45'00", long 110°18'54", in SE¼NE¼SW¼ sec.34, T.12 N., R.11 E., Judith Basin County, Hydrologic Unit 10040103, Lewis and Clark National Forest, on right bank just downstream from Trask Gulch, 8 mi (13 km) upstream from confluence with Middle Fork, and 18 mi (29 km) southwest of Utica.

DRAINAGE AREA.--58.7 mi^2 (152 km^2).

PERIOD OF RECORD.--August 1958 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,420 ft (1,650 m) corrected, (from topographic map).

REMARKS.--Records good except those for October, which are fair. Minor diversions for irrigation above station.

AVERAGE DISCHARGE.--18 years, 22.3 ft^3/s (0.632 m^3/s), 16,160 acre-ft/yr (19.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,340 ft^3/s (37.9 m^3/s) May 30, 1967, gage height, 6.87 ft (2.094 m), from rating curve extended above 180 ft^3/s (5.10 m^3/s) on basis of slope-area measurement of peak flow; minimum daily, 1.0 ft^3/s (0.028 m^3/s) Nov. 27, 1958.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 30, 1967, is the highest since 1927, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 80 ft^3/s (2.27 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 13	0330	93	2.63	3.49	1.064	June 22	1900	93	2.63	3.52	1.073
May 8	2030	*363	10.3	*4.82	1.469						

Minimum discharge, 2.3 ft^3/s (0.065 m^3/s) Mar. 25, gage height, 2.13 ft (0.649 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.3	7.9	7.2	4.7	3.9	3.7	6.7	38	54	34	17	8.9
2	9.0	7.6	7.6	4.5	3.9	3.3	5.2	60	52	33	18	8.9
3	8.7	8.2	8.0	4.7	4.0	3.4	5.6	88	48	32	16	8.9
4	9.0	9.3	8.7	4.2	4.3	3.5	6.5	131	49	30	15	8.9
5	8.7	8.7	7.3	4.7	4.3	3.5	12	196	47	29	14	8.6
6	9.0	7.9	7.0	4.7	4.2	3.5	25	210	46	28	15	8.6
7	9.0	7.0	6.7	4.5	4.5	3.5	34	218	43	28	14	8.9
8	9.3	4.5	6.3	4.3	4.7	3.4	32	255	40	27	14	8.6
9	9.0	4.2	6.0	4.3	4.9	3.5	36	275	39	26	14	8.6
10	9.0	5.2	5.6	4.3	4.9	3.9	39	278	37	25	14	8.3
11	9.0	6.3	5.8	4.0	4.9	4.3	48	285	37	25	13	9.2
12	9.2	6.0	6.0	4.0	4.7	3.8	67	234	36	32	13	12
13	9.5	6.5	6.0	4.3	4.9	3.5	82	234	36	28	12	9.2
14	9.5	6.3	6.0	4.3	4.9	3.5	73	246	35	24	13	8.9
15	9.5	6.3	6.0	4.0	4.9	3.5	62	204	32	23	12	8.6
16	9.2	6.3	5.8	4.0	4.7	3.5	54	174	35	22	12	8.6
17	9.0	6.0	5.4	4.3	4.7	4.3	46	163	40	21	11	8.6
18	9.0	4.9	5.6	4.3	4.9	9.0	41	154	35	24	11	10
19	9.0	3.2	5.6	4.2	4.7	6.7	36	142	31	24	11	11
20	8.8	4.7	5.4	4.2	4.2	5.4	34	131	30	22	11	9.5
21	8.6	6.3	5.4	4.0	3.7	4.3	32	116	31	20	11	9.2
22	8.5	5.8	5.4	4.0	3.7	5.6	32	105	71	20	10	8.9
23	8.5	6.7	5.2	4.0	3.7	4.5	29	97	61	19	11	8.9
24	8.5	7.3	5.2	4.0	3.9	4.5	28	90	52	18	11	10
25	8.5	7.0	5.2	3.8	3.9	4.0	33	83	47	17	10	12
26	8.0	7.0	4.9	3.9	3.9	4.2	29	74	43	17	10	10
27	7.9	7.0	4.9	4.0	3.9	3.9	36	68	40	16	9.8	9.8
28	7.9	7.0	4.9	4.0	3.9	3.9	33	68	38	16	9.5	9.5
29	7.9	7.0	4.9	4.0	3.9	3.7	30	65	36	16	9.2	9.2
30	7.6	6.0	4.9	4.0	---	4.2	29	59	35	16	9.5	9.2
31	7.9	---	4.8	4.0	---	6.5	---	58	---	15	9.2	---
TOTAL	271.5	194.1	183.7	130.2	125.6	132.0	1056.0	4599	1255	727	380.2	279.5
MEAN	8.76	6.47	5.93	4.20	4.33	4.26	35.2	148	41.8	23.5	12.3	9.32
MAX	9.5	9.3	8.7	4.7	4.9	9.0	82	285	71	34	18	12
MIN	7.6	3.2	4.8	3.8	3.7	3.3	5.2	38	30	15	9.2	8.3
AC-FT	539	385	364	258	249	262	2090	9120	2490	1440	754	554

CAL YR 1975 TOTAL 15636.0 MEAN 42.8 MAX 562 MIN 2.6 AC-FT 31010
WTR YR 1976 TOTAL 9333.8 MEAN 25.5 MAX 285 MIN 3.2 AC-FT 18510

06115200 MISSOURI RIVER NEAR LANDUSKY, MT

LOCATION.--Lat 47°37'51", long 108°41'13", in NW¼NE¼ sec.31, T.22 N., R.24 E., Fergus County, Hydrologic Unit 10040104, Fort Peck Game Range, on right bank 380 ft (116 m) upstream from bridge on U.S. Highway 191, 0.9 mi (1.4 km) upstream from Armells Creek, 20 mi (32 km) south of Landusky, and at mile 1,921.61 (3,091.87 km).

DRAINAGE AREA.--40,987 mi^2 (106,156 km^2). Area at site used prior to Dec. 13, 1968, 40,763 mi^2 (105,576 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1934 to current year. Prior to October 1968, published as "at powerplant ferry, near Zortman."

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,239.96 ft (682.740 m) above mean sea level (State Highway bench mark). Prior to Feb. 7, 1935, nonrecording gage, and Feb. 7, 1935, to Dec. 12, 1968, water-stage recorder, at site 16.5 mi (26.5 km) upstream at datum 33.06 ft (10.077 m) higher.

REMARKS.--Water-discharge records good except those for winter period, which are poor. Flow regulated by 24 smaller irrigation reservoirs and powerplants (see p.577), Clark Canyon Reservoir (see p.37), Canyon Ferry Reservoir (see p. 70), and Tiber Reservoir (see p.102). Diversions for irrigation of about 870,400 acres (3,520 km^2) above station.

AVERAGE DISCHARGE.--42 years, 9,349 ft^3/s (264.7 m^3/s), 6,773,000 acre-ft/yr (8.35 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 137,000 ft^3/s (3,880 m^3/s) June 6, 1953, gage height, 22.20 ft (6.767 m), from graph based on gage readings, site and datum then in use; maximum gage height, 30.16 ft (9.193 m) Mar. 19, 1947 (ice jam), from floodmark, site and datum then in use; minimum discharge, 1,120 ft^3/s (31.7 m^3/s) July 8, 1936.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 35,500 ft^3/s (1,110 m^3/s) May 17, gage height, 21.74 ft (6.626 m); maximum gage height, 25.16 ft (7.669 m), Mar. 21, (backwater from ice); minimum daily discharge, 5,000 ft^3/s (142 m^3/s) Mar. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10000	12300	8500	9000	12000	9000	12200	19300	27500	23200	8850	8920
2	10100	12000	8500	8600	12000	7500	12200	20400	27000	22600	8620	8590
3	9880	11300	9000	8200	12000	6000	12200	21500	26500	22200	8970	8590
4	10100	11600	10000	8000	11500	5500	12200	22900	25900	20500	9530	8500
5	9630	11400	11000	7400	11000	5000	12300	24400	24700	17900	9800	8640
6	10100	11400	10500	7000	10000	5500	12300	25900	24600	17000	10700	8920
7	10300	11400	10500	6600	9000	8000	13800	29600	25500	16900	10100	8640
8	10300	11600	10000	6400	7000	10000	12400	31600	24700	15700	10300	8660
9	9850	12100	10000	7000	8000	14000	13000	31600	24300	15400	10100	8710
10	9400	11900	10000	7600	9000	15000	13400	30900	24400	13700	9880	8730
11	9330	11700	10000	8000	10000	16000	13700	30600	22700	12500	10300	8730
12	9260	11600	9500	8600	11000	14000	13900	31000	20700	12600	10300	8800
13	9600	11500	9000	9400	11000	11000	14000	32100	19600	12100	9830	8620
14	10200	11400	8500	10000	11000	11000	14200	33100	19900	11600	9930	8850
15	10700	11500	8500	10500	11000	11000	14300	32600	19500	11200	9700	9300
16	10400	11800	8500	10500	10000	12000	14700	33000	19400	10300	9850	9090
17	10000	11600	8500	10500	10000	13000	14600	35200	19300	9730	9550	8620
18	10700	11100	8400	11000	10000	14000	16000	34400	18900	9860	9400	8710
19	10600	11300	8500	12000	10000	17000	17900	33000	19300	9300	9210	9330
20	10800	11400	9000	11500	10000	19000	18700	32700	19300	9480	9280	9010
21	10500	11200	9000	11000	10000	21000	17900	32200	19200	9600	9090	8870
22	10700	10500	9000	10500	10000	19000	17400	31700	22700	9400	8780	9350
23	10300	10000	9000	10000	10000	17000	17300	31100	18100	9480	8900	9380
24	10100	9500	9000	10000	10000	13200	17300	30500	18900	9350	9010	9300
25	10800	9000	9000	9600	10000	13000	17500	30000	19600	9230	9130	9550
26	11000	8500	9000	9400	10000	12600	17700	29600	20600	8970	9430	8900
27	10400	8000	9000	9400	10000	12800	17900	29900	22800	9210	9160	8660
28	10800	8000	9000	9400	10000	12500	18600	29700	24600	9090	9160	9280
29	11600	8000	9000	10000	10000	12300	18600	28400	24400	9600	8970	9130
30	11300	8000	9000	11000	---	12300	18800	27900	23700	9630	9110	8870
31	11500	---	9000	12000	---	12100	---	28400	---	9210	9260	---
TOTAL	320250	322600	285400	290100	295500	381300	457000	915200	668300	396500	294200	267250
MEAN	10330	10750	9206	9358	10190	12300	15230	29520	22280	12790	9490	8908
MAX	11600	12300	11000	12000	12000	21000	18800	35200	27500	23200	10700	9550
MIN	9260	8000	8400	6400	7000	5000	12200	19300	18100	8970	8620	8500
AC-FT	635200	639900	566100	575400	586100	756300	906500	1815000	1326000	786600	583500	530100

CAL YR 1975 TOTAL 5945320 MEAN 16290 MAX 75100 MIN 5200 AC-FT 11790000
WTR YR 1976 TOTAL 4893660 MEAN 13370 MAX 35200 MIN 5000 AC-FT 9707000

06115200 MISSOURI RIVER NEAR LANDUSKY, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.
PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: July 1972 to current year.
REMARKS.--Prior to July 1972, sampling and record computations under supervision of Corps of Engineers, U.S. Army. Flow affected by ice during most of winter months. Flow mostly regulated by reservoirs and power-plants.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily, 27,400 mg/L June 22, 1976; minimum daily, 5 mg/L on several days during December 1971 and January 1972.
SEDIMENT LOADS: Maximum daily, 1,680,000 tons (1,520,000 tonnes); minimum daily, 82 tons (74 tonnes) Dec. 27, 1971.
EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily, 27,400 mg/L June 22; minimum daily, 30 mg/L Dec. 24.
SEDIMENT LOADS: Maximum daily, 1,680,000 tons (1,520,000 tonnes); minimum daily, 719 tons (652 tonnes) Jan. 5.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	CHEMICAL OXYGEN DEMAND (HIGH LEVEL) (MG/L)	HARDNESS (CA,MG) (MG/L)
JUL											
16...	1200	10500	420	7.9	25.5	22.5	110	7.8	96	96	170
AUG											
11...	1430	10500	425	8.4	28.0	21.0	290	7.8	95	--	190
SEP											
16...	1330	8830	395	8.3	28.0	17.5	9	8.4	96	--	170

DATE	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)
JUL											
16...	40	43	16	22	.7	3.0	163	0	87	6.6	.6
AUG											
11...	55	47	17	26	.8	2.9	161	0	100	6.2	.6
SEP											
16...	40	41	16	18	.6	2.7	156	0	81	5.7	.8

DATE	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)
JUL											
16...	10	269	.37	7630	.02	.00	.68	.68	.70	.04	22
AUG											
11...	9.9	289	.39	8190	.44	.37	.56	.93	1.4	.37	--
SEP											
16...	10	252	.34	6010	.00	.00	.17	.17	.17	.01	--

DATE	DISSOLVED ARSENIC (AS) (UG/L)	DISSOLVED BORON (B) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DISSOLVED IRON (FE) (UG/L)
JUL										
16...	16	80	<10	1	10	0	30	4	6100	70
AUG										
11...	--	90	--	--	--	--	--	--	--	120
SEP										
16...	--	70	--	--	--	--	--	--	--	80

06115200 MISSOURI RIVER NEAR LANDUSKY, MT--Continued

WATER QUALITY DATA, JULY TO SEPTEMBER 1976

DATE	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
JUL										
16...	<100	3	110	0	.2	.2	1	1	60	0
AUG										
11...	--	--	--	--	--	--	--	--	--	--
SEP										
16...	--	--	--	--	--	--	--	--	--	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
OCT												
09...	1130	9.5	10300	185	5140	--	--	25	53	100	--	--
APR												
07...	1600	12.5	13800	326	12200	--	--	61	77	100	--	--
MAY												
12...	1515	14.0	30900	957	79800	10	27	51	64	81	99	100
JUN												
17...	1300	16.0	19200	812	42100	58	77	91	96	100	--	--
AUG												
11...	1430	21.0	10500	867	24600	57	83	93	95	100	--	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM
OCT										
09...	1130	9.5	1	3	67	89	97	97	99	99
NOV										
12...	1400	2.0	11	17	78	93	98	98	99	100
APR										
07...	1600	12.5	10	80	96	99	100	--	--	--
AUG										
11...	1430	21.0	86	96	100	--	--	--	--	--
SEP										
16...	1330	17.5	19	34	54	94	97	97	99	--

06115200 MISSOURI RIVER NEAR LANDUSKY, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	10000	149	4020	12300	401	13300	8500	451	10400
2	10100	241	6570	12000	349	11300	8500	409	9390
3	9880	320	8540	11300	368	11200	9000	403	9790
4	10100	335	9140	11600	369	11600	10000	410	11100
5	9630	323	8400	11400	315	9700	11000	426	12700
6	10100	290	7910	11400	257	7910	10500	451	12800
7	10300	223	6200	11400	238	7330	10500	493	14000
8	10300	117	3250	11600	279	8740	10000	537	14500
9	9850	190	5050	12100	295	9640	10000	535	14400
10	9400	386	9800	11900	272	8740	10000	489	13200
11	9330	458	11500	11700	269	8500	10000	447	12100
12	9260	297	7430	11600	291	9110	9500	425	10900
13	9600	222	5750	11500	328	10200	9000	442	10700
14	10200	384	10600	11400	284	8740	8500	435	9980
15	10700	520	15000	11500	125	3880	8500	380	8720
16	10400	530	14900	11800	100	3190	8500	304	6980
17	10000	484	13100	11600	264	8270	8500	240	5510
18	10700	395	11400	11100	320	9590	8400	190	4310
19	10600	308	8810	11300	216	6590	8500	148	3400
20	10800	242	7060	11400	185	5690	9000	130	3160
21	10500	278	7880	11200	270	8160	9000	135	3280
22	10700	463	13400	10500	286	8110	9000	112	2720
23	10300	470	13100	10000	203	5480	9000	41	996
24	10100	170	4640	9500	171	4390	9000	30	729
25	10800	131	3820	9000	233	5660	9000	63	1530
26	11000	241	7160	6500	330	7570	9000	74	1800
27	10400	272	7640	8000	445	9610	9000	75	1820
28	10800	163	5340	8000	556	12000	9000	86	2090
29	11600	191	5980	8000	573	12400	9000	108	2620
30	11300	364	11100	8000	522	11300	9000	105	2550
31	11500	461	14300	---	---	---	9000	90	2190
TOTAL	320250	---	268790	322600	---	257900	285400	---	220365
		JANUARY			FEBRUARY			MARCH	
1	9000	73	1770	12000	57	1850	9000	173	4200
2	8600	55	1280	12000	53	1720	7500	172	3480
3	8200	44	974	12000	62	2010	6000	153	2480
4	8000	41	886	11500	78	2420	5500	96	1430
5	7400	36	719	11000	97	2880	5000	81	1090
6	7000	51	964	10000	117	3160	5500	126	1870
7	6600	79	1410	9000	143	3470	8000	217	4690
8	6400	110	1900	7000	179	3380	10000	283	7640
9	7000	127	2400	8000	191	4130	14000	317	12000
10	7600	135	2770	9000	190	4620	15000	343	13900
11	8000	138	2980	10000	185	4990	16000	362	15600
12	8600	113	2620	11000	175	5200	14000	353	13300
13	9400	56	1420	11000	163	4840	11000	255	7570
14	10000	40	1080	11000	148	4400	11000	178	5290
15	10500	67	1900	11000	133	3950	11000	172	5110
16	10500	123	3490	10000	113	3050	12000	173	5610
17	10500	234	6630	10000	91	2460	13000	170	5970
18	11000	375	11100	10000	68	1840	14000	160	6050
19	12000	612	19800	10000	58	1570	17000	151	6930
20	11500	713	22100	10000	58	1570	19000	148	7590
21	11000	588	17500	10000	69	1860	21000	680	38600
22	10500	419	11900	10000	98	2650	19000	1450	74400
23	10000	305	8230	10000	128	3460	17000	1090	50000
24	10000	214	5780	10000	148	4000	13200	770	27400
25	9600	133	3450	10000	162	4370	13000	1000	35100
26	9400	70	1780	10000	170	4590	12600	580	19700
27	9400	52	1320	10000	174	4700	12800	680	23500
28	9400	53	1350	10000	175	4720	12500	680	23000
29	10000	60	1620	10000	175	4720	12300	380	12600
30	11000	65	1930	---	---	---	12300	630	20900
31	12000	63	2040	---	---	---	12100	513	16800
TOTAL	290100	---	145093	295500	---	98580	381300	---	473800

06115200 MISSOURI RIVER NEAR LANDUSKY, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	12200	517	17000	19300	800	41700	27500	1380	102000
2	12200	388	12800	20400	1110	61100	27000	475	34600
3	12200	351	11600	21500	1120	65000	26500	560	40100
4	12200	463	15300	22900	1230	76100	25900	422	29500
5	12300	512	17000	24400	1560	103000	24700	309	20600
6	12300	439	14600	25900	1180	82500	24600	300	19900
7	13800	350	13000	29600	1700	136000	25500	2900	200000
8	12400	260	8700	31600	1650	141000	24700	2000	133000
9	13000	266	9340	31600	1320	113000	24300	890	58400
10	13400	426	15400	30900	970	80900	24400	560	36900
11	13700	496	18300	30600	930	76800	22700	508	31100
12	13900	412	15500	31000	890	74500	20700	595	33300
13	14000	313	11800	32100	748	64800	19600	320	16900
14	14200	255	9780	33100	753	67300	19900	600	32200
15	14300	209	8070	32600	608	53500	19500	640	33700
16	14700	188	7460	33000	830	74000	19400	300	15700
17	14600	245	9660	35200	1110	105000	19300	599	31200
18	16000	482	20800	34400	864	80200	18900	718	36600
19	17900	797	38500	33000	830	74000	19300	830	43300
20	18700	953	48100	32700	710	62700	19300	1140	59400
21	17900	819	39600	32200	721	62700	19200	7500	389000
22	17400	650	30500	31700	648	55500	22700	27400	1680000
23	17300	585	27300	31100	512	43000	18100	16300	797000
24	17300	700	32700	30500	521	42900	18900	4200	214000
25	17500	798	37700	30000	335	27100	19600	1950	103000
26	17700	644	30800	29600	459	36700	20600	1620	90100
27	17900	581	28100	29900	565	45600	22800	1230	75700
28	18600	706	35500	29700	341	27300	24600	1040	69100
29	18600	786	39500	28400	619	47500	24400	775	51100
30	18800	739	37500	27900	620	46700	23700	605	38700
31	---	---	---	28400	1130	86600	---	---	---
TOTAL	457000	---	661910	915200	---	2154700	668300	---	4516100
		JULY			AUGUST			SEPTEMBER	
1	23200	965	60400	8850	148	3540	8920	272	6550
2	22600	808	53000	8620	180	4190	8590	175	4060
3	22200	520	31200	8970	148	3580	8590	116	2690
4	20500	290	16100	9530	134	3450	8500	103	2360
5	17900	280	13500	9800	182	4820	8640	92	2150
6	17000	360	16500	10700	439	12700	8920	65	1570
7	16900	460	21000	10100	444	12100	8640	58	1350
8	15700	575	24400	10300	531	14800	8660	108	2530
9	15400	570	23700	10100	570	15500	8710	152	3570
10	13700	395	14600	9880	627	16700	8730	151	3560
11	12500	460	15500	10300	765	21300	8730	136	3210
12	12600	1930	65700	10300	755	21000	8800	114	2710
13	12100	1900	62100	9830	344	9130	8620	91	2120
14	11600	635	19900	9930	175	4690	8850	53	1270
15	11200	405	12200	9700	310	8120	9300	55	1380
16	10300	360	10000	9850	366	9730	9090	157	3850
17	9730	162	4260	9550	338	8720	8620	187	4350
18	9880	320	8540	9400	391	9920	8710	83	1950
19	9300	334	8390	9210	450	11200	9330	37	932
20	9480	268	6860	9280	426	10700	9010	83	2020
21	9600	262	6790	9090	268	6580	8870	126	3020
22	9400	362	9190	8780	221	5240	9350	130	3280
23	9480	394	10100	8900	237	5700	9380	121	3060
24	9350	215	5430	9010	237	5770	9300	106	2660
25	9230	82	2040	9130	240	5920	9550	116	2990
26	8970	182	4410	9430	246	6260	8900	178	4280
27	9210	269	6690	9160	199	4920	8660	181	4230
28	9090	230	5640	9160	173	4280	9280	72	1800
29	9600	154	3990	8970	305	7390	9130	109	2690
30	9630	85	2210	9110	395	9720	8870	136	3260
31	9210	92	2290	9260	353	8830	---	---	---
TOTAL	396560	---	546630	294200	---	276500	267250	---	85452
YEAR	4893660		9705820						

06115500 NORTH FORK MUSSELSHELL RIVER NEAR DELPINE, MT

LOCATION.--Lat 46°36'36", long 110°34'30", in SW¼SE¼ sec.22, T.10 N., R.9 E., Meagher County, Hydrologic Unit 10040201, on right bank 0.5 mi (0.8 km) upstream from high-water line of Bair Reservoir at elevation 5,330 ft (1,630 m), 3 mi (5 km) downstream from Lion Creek, and 4 mi (6 km) northwest of Delpine.

DRAINAGE AREA.--31.4 mi^2 (81.3 km^2).

PERIOD OF RECORD.--May 1940 to current year.

REVISED RECORDS.--WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 5,380 ft (1,640 m), by barometer.

REMARKS.--Records fair except those for winter period, which are poor. Small diversions for irrigation of hay meadows above station.

AVERAGE DISCHARGE.--36 years, 12.2 ft^3/s (0.346 m^3/s), 8,840 acre-ft/yr (10.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 423 ft^3/s (12.0 m^3/s) Apr. 1, 1950, gage height, 4.63 ft (1.411 m), from rating curve extended above 150 ft^3/s (4.25 m^3/s); minimum, 1.6 ft^3/s (0.045 m^3/s) Aug. 16, 1941, gage height, 0.32 ft (0.098 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50.0 ft^3/s (1.56 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 18	1730	ice jam		*3.15	0.960	Apr. 5	2130	57	1.61	1.61	0.491
Mar. 31	2130	*58	1.64	1.62	0.494	June 21	1900	*58	1.64	1.60	0.488

Minimum discharge, 3.6 ft^3/s (0.10 m^3/s) Sept. 22, gage height, 0.47 ft (0.144 m), but may have been less during period of ice effect.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	16	11	9.5	8.5	7.6	24	25	42	14	6.2	4.7
2	5.5	17	12	9.5	8.8	7.4	16	24	42	14	7.6	4.6
3	5.5	18	15	9.0	8.8	7.0	16	24	39	14	6.2	4.4
4	5.6	16	17	9.0	9.0	6.5	24	25	29	13	5.8	4.4
5	5.8	14	16	8.5	8.5	6.5	31	28	27	13	5.6	4.2
6	5.8	13	15	8.0	9.0	7.0	31	30	27	12	5.6	4.2
7	6.2	12	14	7.6	12	7.0	30	30	27	11	5.3	4.6
8	7.0	11	13	7.5	15	7.5	28	31	27	13	5.3	4.4
9	7.2	11	22	7.5	13	8.0	26	32	24	14	5.3	4.2
10	7.2	10	19	7.5	11	9.0	25	34	22	13	5.3	4.0
11	7.6	10	16	7.5	10	8.8	26	37	23	12	5.1	4.7
12	7.4	10	14	7.5	10	7.6	26	39	22	11	5.1	5.6
13	7.8	11	12	8.0	8.8	8.0	26	39	21	9.5	4.9	4.6
14	8.3	12	11	8.0	8.5	7.4	25	42	19	8.8	5.3	4.0
15	8.8	12	10	8.0	8.3	7.2	25	43	17	8.5	5.3	4.0
16	8.0	12	9.5	9.5	8.3	7.6	25	44	20	8.0	5.3	4.0
17	7.6	12	9.0	11	8.3	10	24	44	20	7.8	5.3	3.9
18	7.4	12	9.0	11	8.3	30	23	44	19	9.5	5.3	5.3
19	7.4	10	9.0	9.5	8.3	20	22	45	17	9.8	5.8	5.5
20	7.4	9.0	9.0	9.5	8.3	14	22	45	18	8.5	5.8	4.4
21	8.5	8.5	9.5	9.5	8.0	13	21	46	23	8.0	5.6	4.2
22	8.3	9.0	10	9.5	8.3	13	21	45	31	7.6	5.3	4.0
23	8.3	9.5	10	9.5	8.3	14	21	47	22	7.2	5.8	4.4
24	9.0	9.5	11	8.5	8.3	13	20	48	19	7.0	6.2	4.7
25	8.3	9.5	11	9.0	8.3	11	21	48	17	6.8	5.5	6.9
26	8.5	9.5	11	9.0	8.0	11	22	47	16	6.4	5.3	5.5
27	9.8	9.5	11	9.5	7.8	11	20	46	15	6.0	5.3	4.7
28	11	9.5	11	9.5	7.8	11	20	46	15	5.8	5.1	4.4
29	15	9.5	10	9.3	7.8	9.8	22	45	14	5.8	4.9	4.0
30	15	10	10	9.3	---	12	25	44	14	5.6	4.7	3.9
31	15	---	10	9.0	---	23	---	43	---	5.5	5.1	---
TOTAL	255.7	342.0	377.0	274.7	263.3	335.9	708	1210	688	296.1	170.2	136.4
MEAN	8.25	11.4	12.2	8.86	9.08	10.8	23.6	39.0	22.9	9.55	5.49	4.55
MAX	15	18	22	11	15	30	31	48	42	14	7.6	6.9
MIN	5.5	8.5	9.0	7.5	7.8	6.5	16	24	14	5.5	4.7	3.9
AC-FT	507	678	748	545	522	666	1400	2400	1360	587	338	271

CAL YR 1975 TOTAL 6523.9 MEAN 17.9 MAX 96 MIN 4.0 AC-FT 12940
WTR YR 1976 TOTAL 5057.3 MEAN 13.8 MAX 48 MIN 3.9 AC-FT 10030

06118500 SOUTH FORK MUSSELSHELL RIVER ABOVE MARTINSDALE, MT

LOCATION.--Lat 46°27'21", long 110°22'54", in NW¼ sec.17, T.8 N., R.11 E., Meagher County, Hydrologic Unit 10040201, on left bank 2 mi (3 km) downstream from Cottonwood Creek, 3 mi (5 km) west of Martinsdale, and 6 mi (10 km) upstream from confluence with North Fork.

DRAINAGE AREA.--287 mi^2 (743 km^2).

PERIOD OF RECORD.--October 1941 to current year. Monthly discharge only November 1941 to May 1942, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1942(M), 1944(M). WSP 1729: Drainage area. WRD MT-75-1: 1948, 1964(M), 1967.

GAGE.--Water-stage recorder. Altitude of gage is 4,900 ft (1,490 m), by barometer. Prior to May 15, 1942, non-recording gage at same site and datum.

REMARKS.--Records poor. Diversions for irrigation of about 6,600 acres (26.7 km^2) of which 250 acres (1.01 km^2) is below station.

AVERAGE DISCHARGE.--35 years, 88.7 ft^3/s (2.511 m^3/s), 64,260 acre-ft^3/yr (79.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,240 ft^3/s (148 m^3/s) June 19, 1975, gage height, 7.27 ft (2.216 m); minimum, 0.1 ft^3/s (0.003 m^3/s) Aug. 28 to Sept. 2, 1949, Mar. 29, 1950.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,240 ft^3/s (35.1 m^3/s) May 15, gage height, 6.02 ft (1.835 m), only peak above base of 480 ft^3/s (13.6 m^3/s); minimum daily, 15 ft^3/s (0.42 m^3/s) Mar. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	76	70	28	29	17	118	317	501	160	76	39
2	42	83	100	26	26	16	91	445	474	158	160	37
3	40	87	105	25	24	15	66	460	465	153	102	35
4	40	93	95	26	22	17	91	600	453	150	82	36
5	39	78	85	28	20	18	129	768	432	140	89	35
6	39	69	80	30	27	19	174	752	438	133	76	35
7	39	64	66	33	30	20	214	658	441	133	72	41
8	45	49	59	32	32	22	214	705	417	128	74	41
9	48	42	71	32	30	24	227	864	393	119	69	40
10	51	43	85	32	28	26	232	960	345	119	66	38
11	54	46	64	32	27	30	230	1110	333	108	62	38
12	54	46	49	33	26	31	251	1010	300	117	59	48
13	67	48	42	35	24	28	251	850	315	128	58	47
14	67	51	38	40	22	27	241	1100	276	106	58	43
15	76	54	32	39	21	26	217	1140	243	95	56	41
16	59	59	30	38	21	29	199	911	231	93	58	38
17	52	54	32	38	20	40	174	820	228	83	58	36
18	48	42	34	39	20	131	152	946	222	95	59	50
19	46	35	36	37	20	186	143	1030	205	138	59	106
20	43	32	38	34	20	111	129	1020	216	102	55	61
21	55	31	38	30	20	82	125	976	225	85	55	50
22	62	30	40	28	21	54	122	860	207	72	58	48
23	59	30	49	25	21	67	120	872	294	58	58	50
24	46	30	33	24	19	52	109	842	246	52	67	50
25	48	29	33	25	21	42	127	765	222	50	55	50
26	54	29	34	27	20	33	143	662	208	48	46	51
27	48	28	35	30	19	34	69	596	195	44	44	48
28	51	28	66	30	19	32	70	585	180	42	42	46
29	52	27	46	27	18	30	136	585	170	48	40	43
30	64	40	34	27	---	30	190	543	163	48	39	41
31	82	---	30	30	---	55	---	529	---	47	40	---
TOTAL	1612	1453	1649	960	667	1344	4754	24281	9098	3052	1992	1362
MEAN	52.0	48.4	53.2	31.0	23.0	43.4	158	783	303	98.5	64.3	45.4
MAX	82	93	105	40	32	186	251	1140	501	160	160	106
MIN	39	27	30	24	18	15	66	317	163	42	39	35
AC-FT	3200	2880	3270	1900	1320	2670	9430	48160	18050	6050	3950	2700

CAL YR 1975 TOTAL 79225 MEAN 217 MAX 4430 MIN 11 AC-FT 157100
WTR YR 1976 TOTAL 52224 MEAN 143 MAX 1140 MIN 15 AC-FT 103600

06120500 MUSSELSHELL RIVER AT HARLOWTON, MT

LOCATION.--Lat 46°25'48", long 109°50'24", in NE¼ sec.28, T.8 N., R.15 E., Wheatland County, Hydrologic Unit 10040201, on left bank 350 ft (107 m) downstream from bridge on U.S. Highway 191, 1 mi (2 km) southwest of Harlowton, and 6 mi (10 km) upstream from American Fork.

DRAINAGE AREA.--1,125 mi^2 (2,914 km^2).

PERIOD OF RECORD.--July 1907 to November 1929, March 1930 to December 1932, April to August 1933, February 1934 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1912, 1915(M), 1918, 1925. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,160 ft (1,270 m), by barometer. Prior to Dec. 8, 1937, non-recording gages at site 1.2 mi (1.9 km) downstream at different datums. Dec. 8, 1937, to Aug. 26, 1955, non-recording gage at bridge 300 ft (90 m) upstream at different datums.

REMARKS.--Records fair except those for winter period, which are poor. Some regulation by Bair and Martinsdale Reservoirs (see p. 581). Diversions for irrigation of about 37,000 acres (150 km^2) above station, of which 2,300 acres (9.31 km^2) is flood irrigated.

AVERAGE DISCHARGE.--66 years (1907-29, 1930-32, 1934-76), 163 ft^3/s (4.62 m^3/s) 118,100 acre-ft/yr (146 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 7,270 ft^3/s (206 m^3/s) June 20, 1975, gage height, 10.01 ft (3.051 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,820 ft^3/s (51.5 m^3/s) May 16, gage height, 6.01 ft (1.832 m); maximum gage height, 6.77 ft (2.064 m) Dec. 18 (backwater from ice); minimum discharge, 38 ft^3/s (1.08 m^3/s) Sept. 4, 5, 6, gage height, 2.00 ft (0.610 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	107	236	150	170	150	110	137	511	731	286	112	54
2	108	214	200	150	140	100	192	791	662	267	270	48
3	107	176	300	140	130	90	172	893	628	259	382	43
4	98	161	320	130	120	100	154	959	602	294	315	40
5	93	158	310	120	110	120	174	1120	590	298	331	39
6	91	146	290	120	105	120	222	1280	585	261	325	44
7	83	142	230	120	105	110	263	1320	599	236	284	50
8	78	134	200	120	110	110	309	1270	563	243	254	54
9	83	123	190	120	120	110	345	1300	520	205	223	63
10	93	128	180	120	120	110	397	1450	503	224	197	66
11	101	174	170	120	120	110	372	1550	511	210	187	69
12	110	214	170	125	130	110	369	1640	446	211	179	81
13	140	167	170	130	130	110	382	1600	436	224	236	87
14	193	169	170	140	130	110	418	1490	465	197	240	87
15	211	172	180	150	130	110	407	1680	397	160	229	77
16	196	174	190	160	140	105	382	1760	318	143	221	70
17	176	176	190	170	140	120	348	1530	353	143	152	66
18	165	169	200	180	140	170	330	1390	395	155	140	83
19	156	165	200	190	150	250	279	1400	345	201	133	182
20	154	150	200	180	160	300	263	1450	334	233	119	179
21	174	140	200	170	170	220	239	1430	454	189	97	144
22	201	140	200	160	170	183	230	1410	795	154	89	114
23	198	130	200	150	160	171	230	1330	666	123	87	105
24	188	130	200	140	150	153	217	1390	556	105	94	103
25	167	130	200	130	150	136	206	1420	474	93	90	113
26	181	120	200	120	150	123	248	1290	401	88	75	152
27	191	120	200	140	140	115	239	1100	359	84	62	161
28	181	120	200	170	130	112	191	934	316	76	55	136
29	179	120	200	180	120	107	211	889	266	67	53	128
30	181	110	190	170	---	102	337	876	278	74	52	119
31	209	---	180	160	---	109	---	793	---	89	55	---
TOTAL	4593	4608	6380	4545	3920	4106	8263	39246	14536	5592	5338	2757
MEAN	148	154	206	147	135	132	275	1266	485	180	172	91.9
MAX	211	236	320	190	170	300	418	1760	795	298	382	182
MIN	78	110	150	120	105	90	137	511	278	67	52	39
AC-FT	9110	9140	12650	9020	7780	8140	16390	77840	28830	11090	10590	5470

CAL YR 1975 TOTAL 151170 MEAN 414 MAX 6200 MIN 40 AC-FT 299800
WTR YR 1976 TOTAL 103884 MEAN 284 MAX 1760 MIN 39 AC-FT 206100

06123500 MUSSELSHELL RIVER NEAR RYEGATE, MT

LOCATION.--Lat 46°18'02", long 109°12'20", in center of S½ sec.3, T.6 N., R.20 E., Golden Valley County, Hydrologic Unit 10040201, on downstream side of county bridge 2 mi (3 km) upstream from Careless Creek and 2 mi (3 km) east of Ryegate.

DRAINAGE AREA.--1,979 mi^2 (5,126 km^2).

PERIOD OF RECORD.--July 1946 to current year. Monthly discharge only for July 1946, published in WSP 1309.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Nonrecording gage. Altitude of gage is 3,600 ft (1,100 m), from topographic map. Prior to June 23, 1967, water-stage recorder at site 1 mi (2 km) downstream at different datum.

REMARKS.--Records fair except those for winter period, which are poor. Some regulation by Bair and Martinsdale Reservoirs (see p. 581). Water is diverted on left bank in sec.8, T.7 N., R.17 E., for storage in Deadman's Basin Reservoir (see p. 581), and can be returned to the stream by canal at a point about 9 mi (14 km) above station or through Careless Creek 2 mi (3 km) below station. Diversions for irrigation of about 45,000 acres (182 km^2) above station, of which 2,700 acres (10.9 km^2) is flood irrigated.

AVERAGE DISCHARGE.--30 years, 183 ft^3/s (5.183 m^3/s), 132,600 acre-ft/yr (163 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,500 ft^3/s (269 m^3/s) June 16, 1967, gage height, 11.8 ft (3.60 m), revised, from floodmark at site and datum then in use; maximum gage height, 12.3 ft (3.75 m) June 21, 1975, from floodmark; no flow Aug. 17-28, 1946.

EXTREMES FOR CURRENT YEAR.--Maximum discharge observed, 2,360 ft^3/s (66.8 m^3/s) May 17, gage height, 6.47 ft (1.972 m); minimum daily, 56 ft^3/s (1.59 m^3/s) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	218	153	170	180	210	140	111	651	962	294	128	142
2	230	195	185	170	210	130	142	1360	822	277	168	149
3	230	255	220	170	210	120	153	1460	717	251	303	135
4	218	222	300	170	200	130	164	1610	635	255	298	131
5	210	202	400	160	190	140	168	1790	580	390	294	128
6	210	202	430	160	170	160	168	2000	635	362	289	135
7	214	195	410	160	160	170	187	2120	672	325	277	142
8	214	191	380	150	170	190	218	2060	695	289	243	145
9	210	171	348	150	175	200	272	1970	657	285	214	153
10	226	168	312	150	180	220	294	1960	640	277	210	157
11	230	164	303	150	190	230	303	1980	690	277	202	157
12	243	195	321	160	200	220	298	2090	610	281	191	168
13	272	202	348	160	200	210	281	2110	570	285	175	175
14	255	195	270	170	210	210	316	2060	570	294	226	149
15	272	202	220	170	210	210	321	2040	540	264	243	135
16	330	214	170	180	210	215	298	2250	400	247	247	131
17	255	226	160	190	210	230	264	2350	370	210	235	114
18	145	230	170	200	200	300	218	2100	420	230	230	160
19	84	218	170	200	200	445	191	1960	415	251	222	160
20	93	179	180	200	190	515	157	1970	381	261	198	187
21	114	170	200	200	180	298	145	2040	339	285	183	179
22	149	160	230	190	180	235	128	1980	470	272	164	179
23	168	180	240	180	180	198	124	1970	962	259	153	160
24	114	190	240	170	190	191	121	1920	872	202	157	79
25	135	190	240	170	190	168	124	1890	610	195	160	79
26	128	180	240	160	180	142	149	1890	560	179	168	71
27	138	170	230	170	180	157	264	1730	495	168	171	71
28	149	160	220	180	170	142	226	1470	430	153	160	63
29	131	150	210	190	150	131	235	1230	352	149	149	59
30	128	150	200	200	---	101	289	1170	312	142	149	56
31	131	---	190	210	---	107	---	1180	---	121	149	---
TOTAL	5844	5679	7907	5420	5495	6255	6329	56361	17398	7750	6356	3949
MEAN	189	189	255	175	189	202	211	1818	580	250	205	132
MAX	330	255	430	210	210	515	321	2350	962	390	303	187
MIN	84	150	160	150	150	101	111	651	312	121	128	56
AC-FT	11590	11260	15680	10750	10900	12410	12550	111800	34500	15370	12610	7830

CAL YR 1975 TOTAL 220976 MEAN 605 MAX 7550 MIN 25 AC-FT 438300
WTR YR 1976 TOTAL 134740 MEAN 368 MAX 2350 MIN 56 AC-FT 267300

06126500 MUSSELSHELL RIVER NEAR ROUNDUP, MT

LOCATION.--Lat 46°25'48", long 108°34'18", in SE¼ sec.22, T.8 N., R.25 E., Musselshell County, Hydrologic Unit 10040202, on left bank just downstream from Half Breed Creek, 0.1 mi (0.2 km) upstream from bridge on U.S. Highway 87, and 2.5 mi (4.0 km) west of Roundup.

DRAINAGE AREA.--4,023 mi^2 (10,420 km^2).

PERIOD OF RECORD.--May 1946 to current year. Monthly discharge only for October 1947 to September 1949, published in WSP 1309.

REVISED RECORDS.--WSP 1086: 1946. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,188.22 ft (971.769 m) above mean sea level. Prior to Sept. 26, 1949, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter period, which are poor. Some regulation by Bair, Martinsdale, and Deadman's Basin Reservoirs (see p. 581). Diversions for irrigation of about 59,600 acres (241 km^2) above station, of which about 11,000 acres (44.5 km^2) is flood irrigated.

AVERAGE DISCHARGE.--30 years, 217 ft^3/s (6.145 m^3/s), 157,200 acre-ft/yr (194 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,610 ft^3/s (272 m^3/s) June 18, 1967, gage height, 12.45 ft (3.795 m); maximum gage height, 12.89 ft (3.929 m) June 22, 1975 (confinement by flood levee); minimum discharge, 0.60 ft^3/s (0.017 m^3/s) May 12, 1962, gage height, 0.63 ft (0.192 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,410 ft^3/s (68.3 m^3/s) May 7, gage height, 6.64 ft (2.024 m); minimum, 100 ft $^3/s$ (2.82 m^3/s) Sept. 30, gage height 1.31 ft (0.399 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	233	188	170	190	270	210	161	527	1120	425	201	239
2	233	209	200	160	250	200	167	1060	988	393	223	239
3	231	242	270	150	230	180	180	1610	861	358	263	249
4	229	285	300	150	210	160	207	1680	759	393	289	231
5	220	270	400	150	190	150	217	1840	708	505	385	235
6	211	256	450	150	170	160	213	2110	704	524	370	235
7	204	251	440	140	180	170	219	2360	704	453	358	237
8	229	240	430	140	190	190	233	2320	672	409	345	241
9	231	229	400	140	200	200	267	2150	641	368	326	247
10	226	213	360	150	220	210	299	2040	599	363	312	253
11	233	204	330	160	230	230	317	1960	570	353	295	251
12	251	156	320	170	260	240	338	2020	791	370	287	257
13	309	185	310	180	270	240	328	2040	676	350	273	259
14	316	213	300	190	280	230	312	2060	637	353	253	265
15	297	251	280	200	280	230	326	2020	637	328	259	271
16	328	273	240	220	280	230	314	1970	587	307	285	283
17	330	282	220	240	280	250	285	2140	517	289	273	253
18	304	285	200	260	270	300	271	2160	479	267	267	227
19	202	282	220	300	270	420	245	2010	520	277	241	205
20	150	231	230	320	260	672	213	1880	508	269	251	233
21	160	140	240	320	260	536	184	1860	484	279	247	261
22	193	130	240	310	260	353	171	1870	476	295	245	259
23	231	140	250	300	260	301	162	1850	898	285	235	237
24	240	170	250	290	260	271	157	1820	1170	269	219	217
25	218	200	260	280	270	247	152	1800	926	259	221	199
26	204	198	260	280	270	225	191	1800	767	257	231	164
27	195	180	260	270	260	213	305	1750	704	249	239	150
28	200	170	250	260	250	211	438	1590	587	249	245	146
29	211	170	250	260	240	201	433	1400	530	245	261	132
30	202	170	230	270	---	173	450	1270	461	227	255	109
31	193	---	210	280	---	170	---	1170	---	195	241	---
TOTAL	7214	6413	8770	6880	7120	7773	7755	56137	20681	10163	8395	6784
MEAN	233	214	283	222	246	251	259	1811	689	328	271	226
MAX	330	285	450	320	280	672	450	2360	1170	524	385	283
MIN	150	130	170	140	170	150	152	527	461	195	201	109
AC-FT	14310	12720	17400	13650	14120	15420	15380	111300	41040	20160	16650	13460

CAL YR 1975 TOTAL 237723 MEAN 651 MAX 6600 MIN 25 AC-FT 471500
WTR YR 1976 TOTAL 154085 MEAN 421 MAX 2360 MIN 109 AC-FT 305600

06127500 MUSSELSHELL RIVER AT MUSSELSHELL, MT

LOCATION.--Lat 46°31'23", long 108°06'30", in 5½SW¼ sec.20, T.9 N., R.29 E., Musselshell County, Hydrologic Unit 10040202, on left bank 0.9 mi (1.4 km) upstream from Hawk Creek, and 1 mi (2 km) west of Musselshell.

DRAINAGE AREA.--4,568 mi^2 (11,831 km^2).

PERIOD OF RECORD.--August 1928 to September 1932 (no records December to February for the water years 1930-31), August 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 2,990 ft (911 m), by barometer. Prior to Oct. 8, 1949, non-recording gage at site 1 mi (2 km) downstream at different datums.

REMARKS.--Records good except those for winter period, which are poor. Some regulation by Bair, Martinsdale, and Deadman's Basin Reservoirs (see p. 581). Diversions for irrigation of about 63,300 acres (256 km^2) above station, of which 12,500 acres (50.6 km^2) is flood irrigated.

AVERAGE DISCHARGE.--33 years (1928-29, 1931-32, 1945-76), 205 ft^3/s (5.806 m^3/s), 148,500 acre-ft/yr (183 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,850 ft^3/s (279 m^3/s) June 19, 1967, gage height, 11.57 ft (3.527 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, about 12 ft (3.7 m) May 19, 1917, at site and datum used August 1945 to October 1949, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,100 ft^3/s (59.5 m^3/s) May 18, gage height, 6.82 ft (2.079 m); minimum daily, 110 ft^3/s (3.12 m^3/s) Nov. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	250	236	125	200	250	180	186	471	1080	480	157	223
2	253	238	130	180	250	150	183	698	1090	442	167	207
3	253	253	160	160	240	140	191	1300	903	414	196	207
4	253	275	210	150	220	130	207	1480	798	390	223	207
5	248	295	300	150	180	140	226	1530	730	414	284	201
6	245	285	400	150	170	160	232	1660	741	459	339	204
7	238	277	420	150	170	170	229	1860	792	450	328	209
8	243	272	400	155	170	190	238	2040	725	406	328	209
9	255	265	360	160	170	200	259	2040	682	357	297	218
10	255	258	330	165	180	220	297	1960	662	324	274	220
11	253	248	320	170	220	240	324	1880	627	321	278	223
12	260	236	280	175	250	250	346	1880	662	321	262	226
13	292	231	260	180	270	260	360	1930	786	328	265	235
14	307	233	240	190	300	260	360	1960	704	304	247	235
15	307	253	230	200	310	260	346	1980	688	294	238	244
16	307	280	220	220	320	260	353	1920	667	265	253	250
17	323	295	220	230	310	270	331	1990	622	250	250	253
18	318	290	220	250	290	310	301	2090	569	223	232	235
19	290	292	230	270	270	398	287	2000	542	223	218	218
20	231	300	250	280	260	593	256	1860	560	223	193	204
21	226	210	260	290	250	682	226	1780	542	218	207	220
22	231	200	270	300	250	506	204	1790	524	229	204	241
23	245	190	280	310	250	364	196	1760	533	232	215	226
24	263	200	280	310	250	324	180	1720	1040	223	193	212
25	260	230	290	310	260	287	165	1650	1010	223	178	199
26	248	210	290	300	280	262	173	1610	828	215	186	193
27	240	170	290	280	290	244	244	1600	720	199	199	165
28	236	140	290	260	280	232	390	1530	652	193	204	154
29	243	110	280	250	230	226	450	1390	574	196	209	146
30	245	120	260	250	---	220	450	1270	519	188	220	131
31	238	---	230	250	---	201	---	1150	---	173	220	---
TOTAL	8058	7092	8325	6895	7140	8329	8190	51779	21482	9177	7264	6315
MEAN	260	236	269	222	246	269	273	1670	716	296	234	211
MAX	323	300	420	310	320	682	450	2090	1080	480	339	253
MIN	226	110	125	150	170	130	165	471	519	173	157	131
AC-FT	15980	14070	16510	13680	14160	16520	16240	102700	42610	18200	14410	12530

CAL YR 1975 TOTAL 238622 MEAN 654 MAX 6800 MIN 25 AC-FT 473300
WTR YR 1976 TOTAL 150044 MEAN 410 MAX 2090 MIN 110 AC-FT 297600

06130500 MUSSELSHELL RIVER AT MOSBY, MT

LOCATION.--Lat 46°59'41", long 107°53'18", in NW¼NW¼ sec.11, T.14 N., R.30 E., Petroleum County, Hydrologic Unit 10040205, near center of downstream side of bridge on State Highway 20, 0.3 mi (0.5 km) west of Mosby, 10.9 mi (17.5 km) downstream from Flatwillow Creek, and at mile 60.0 (96.5 km).

DRAINAGE AREA.--7,846 mi² (20,321 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May to November 1929, March 1930 to September 1932, February 1934 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1559: 1935-36. WSP 1729: Drainage area.

GAGE.--Nonrecording gage. Altitude of gage is 2,500 ft (760 m), by barometer. Dec. 6, 1962, to Mar. 14, 1966, water-stage recorder at site 900 ft (274 m) downstream at different datum. Mar. 15, 1966, to Dec. 11, 1973, water-stage recorder and nonrecording gages at site 100 ft (30 m) downstream at same datum. See WSP 2116 for history of changes prior to 1962.

REMARKS.--Water-discharge records fair except those for winter period and for period of no gage-height record, which are poor. Some regulation by Bair, Martinsdale, and Deadman's Basin Reservoirs (see p. 581). Diversions for irrigation of about 103,000 acres (417 km²) above station.

AVERAGE DISCHARGE.--44 years (1930-32, 1934-76), 268 ft³/s (7.590 m³/s) 194,200 acre-ft/yr (239 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,000 ft³/s (510 m³/s) June 18, 1944, gage height, 14.43 ft (4.307 m), from rating curve extended above 10,000 ft³/s (283 m³/s); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,300 ft³/s (65.1 m³/s) May 9, gage height, 6.57 ft (2.003 m), from graph based on observer's readings; maximum gage height observed, 6.80 ft (2.073 m), backwater from ice; minimum daily discharge, 76 ft³/s (2.15 m³/s) Aug. 3, 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	221	326	140	260	500	230	310	494	1010	560	101	146
2	232	315	160	250	500	210	282	530	924	620	92	153
3	235	302	180	230	480	190	270	645	864	446	76	146
4	242	320	200	210	450	180	260	1190	810	358	76	140
5	242	340	240	200	420	180	263	1630	696	366	132	136
6	249	362	300	200	380	190	286	1730	870	338	158	143
7	246	358	350	200	320	210	298	1860	930	366	246	148
8	246	338	400	200	280	230	290	2020	972	418	263	155
9	249	318	350	220	260	240	294	2250	684	338	270	160
10	253	290	300	240	260	240	315	2220	655	298	267	168
11	263	318	280	250	270	250	340	2090	660	242	242	173
12	267	235	260	260	290	260	366	1960	660	217	226	178
13	282	220	240	260	320	280	386	1950	690	211	205	187
14	290	240	220	260	340	290	414	2010	846	205	196	193
15	358	270	220	260	340	320	410	2070	738	190	182	205
16	370	310	220	280	340	340	402	2050	684	178	168	208
17	350	350	220	300	340	360	402	1940	672	173	163	202
18	418	370	220	320	330	380	390	2030	620	160	181	217
19	422	365	220	360	320	410	350	2110	560	153	175	217
20	406	362	220	380	300	470	350	2010	560	163	146	211
21	346	330	230	380	290	560	326	1820	590	168	146	178
22	346	300	240	380	280	840	226	1720	546	160	144	184
23	318	250	250	380	270	708	242	1730	520	132	142	190
24	326	230	260	380	270	560	235	1690	640	138	136	193
25	334	210	270	380	270	470	226	1660	690	148	126	190
26	342	200	270	360	270	438	217	1570	1050	148	116	170
27	314	170	270	360	260	390	202	1540	882	132	103	175
28	314	150	270	400	250	354	256	1540	780	108	124	158
29	302	130	270	450	240	335	354	1440	732	103	142	146
30	306	120	270	500	---	318	420	1260	620	96	146	136
31	322	---	270	500	---	310	---	1110	---	99	142	---
TOTAL	9411	8399	7810	9610	9440	10743	9382	51869	22054	7422	5032	5206
MEAN	304	280	252	310	326	347	313	1673	735	239	162	174
MAX	422	370	400	500	500	840	420	2250	1050	620	270	217
MIN	221	120	140	200	240	180	202	494	520	96	76	136
AC-FT	18670	16660	15490	19060	18720	21310	18610	102900	43740	14720	9980	10330

CAL YR 1975 TOTAL 384642 MEAN 1054 MAX 10300 MIN 40 AC-FT 762900
WTR YR 1976 TOTAL 156378 MEAN 427 MAX 2250 MIN 76 AC-FT 310200

06130500 MUSSELSHELL RIVER AT MOSBY, MT--Continued
(National Stream Quality Accounting Network)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to current year.
WATER TEMPERATURES: October 1974 to current year.

REMARKS.--Some regulation by reservoirs and diversions for irrigation upstream from station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,130 micromhos Jan. 13, 14, 1975; minimum daily, 717 micromhos, May 25, 1976.
WATER TEMPERATURES: Maximum daily, 25.5°C July 7, 15, 1975; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,350 micromhos May 4; minimum daily, 717 micromhos May 25.
WATER TEMPERATURES: Maximum daily, 25.0°C Aug. 20; minimum daily, 0.0°C Dec. 16.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	FECAL COLIFORM (COL. PER 100 ML)	FECAL STREPTOCOCCI KF AGAR (COL. PER 100 ML)
OCT											
07...	1500	245	1780	8.3	16.5	12.0	3	9.4	96	10	34
NOV											
11...	1500	323	1850	8.6	4.0	1.0	5	12.4	95	40	70
DEC											
16...	1500	219	1900	8.3	-3.0	.0	8	11.2	84	2	6
JAN											
12...	1430	263	2260	8.1	1.5	.5	20	10.3	78	2	21
FEB											
04...	1230	452	1670	8.3	-10.0	.5	50	11.4	86	--	44
MAR											
03...	1300	193	2080	8.4	--	.5	10	13.0	98	<1	13
APR											
06...	1600	291	1960	8.6	23.0	15.5	15	9.8	108	13	6
MAY											
11...	1430	2080	1000	7.8	18.0	17.0	680	7.6	86	260	240
JUN											
15...	1430	738	1230	8.4	21.0	16.0	150	--	--	380	280
JUL											
14...	1100	202	1560	7.9	25.0	23.0	40	7.6	97	440	96
AUG											
10...	1300	259	1530	8.2	19.0	20.5	20	8.4	102	80	140
SEP											
15...	1300	204	1440	8.2	25.5	20.0	10	8.3	100	50	17

DATE	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)
OCT											
07...	610	370	110	81	190	3.4	4.4	286	0	2.3	740
NOV											
11...	660	400	130	82	190	3.2	5.1	316	0	1.3	800
DEC											
16...	700	420	150	80	190	3.1	5.0	352	0	2.8	780
JAN											
12...	840	500	180	96	230	3.4	4.8	418	0	5.3	1000
FEB											
04...	560	310	120	64	160	2.9	4.3	305	0	2.4	590
MAR											
03...	710	400	140	87	210	3.4	4.2	375	0	2.4	830
APR											
06...	670	410	130	84	210	3.5	4.9	318	0	1.3	810
MAY											
11...	360	140	78	40	92	2.1	4.9	264	0	6.7	320
JUN											
15...	390	170	80	47	120	2.6	3.9	270	0	1.7	430
JUL											
14...	540	310	96	72	190	3.6	5.5	277	0	5.6	690
AUG											
10...	530	320	100	68	170	3.2	5.2	256	0	2.6	620
SEP											
15...	480	270	85	64	160	3.2	4.6	249	0	2.5	580

06130500 MUSSELSHELL RIVER AT MOSBY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT											
07...	17	.4	4.0	1390	1.89	920	.02	.10	.12	.02	--
NOV											
11...	20	.4	4.3	1470	2.00	1280	.07	.51	.58	.01	--
DEC											
16...	18	.4	7.3	1500	2.04	887	.37	.61	.98	.00	11
JAN											
12...	21	.4	7.1	1840	2.50	1310	.43	.40	.83	.03	--
FEB											
04...	15	.4	6.4	1270	1.73	1550	.32	.78	1.1	.11	--
MAR											
03...	21	.4	5.8	1630	2.22	849	.29	.67	.98	.01	4.8
APR											
06...	31	.4	3.5	1570	2.14	1230	.04	.56	.60	.04	--
MAY											
11...	10	.3	8.1	711	.97	3990	.29	3.5	3.8	.91	--
JUN											
15...	12	.4	8.2	904	1.23	1800	.15	1.0	1.2	.26	--
JUL											
14...	18	.4	7.1	1210	1.65	660	.01	.45	.46	.09	11
AUG											
10...	16	.4	6.5	1160	1.58	811	.02	.57	.59	.03	--
SEP											
15...	14	.3	4.9	1080	1.47	595	.00	.22	.22	.02	--

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
DEC												
16...	1500	1	0	<10	1	0	0	<50	0	10	2	280
MAR												
03...	1300	1	1	<10	1	0	0	<50	2	10	1	550
JUL												
14...	1100	3	1	<10	1	0	0	<50	0	10	5	1700

DATE	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
DEC											
16...	20	<100	5	30	10	.0	.0	2	1	20	0
MAR											
03...	0	<100	4	60	30	.1	.0	2	2	40	10
JUL											
14...	40	<100	7	80	10	.2	.0	1	1	20	0

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TOTAL ATRA-ZINE (UG/L)	ATRA-ZINE IN BOTTOM MATERI-AL (UG/KG DRY SOLIDS)	TOTAL ALDRIN (UG/L)	ALDRIN IN BOTTOM MA-TERIAL (UG/KG)	TOTAL CHLOR-DANE (UG/L)	CHLOR-DANE IN BOTTOM MA-TERIAL (UG/KG)	TOTAL DDD (UG/L)	DDD IN BOTTOM MA-TERIAL (UG/KG)	TOTAL DDE (UG/L)	DDE IN BOTTOM MA-TERIAL (UG/KG)	TOTAL DDT (UG/L)
JAN												
12...	1430	NO	--	ND	--	NO	--	NO	--	NO	--	NO
JUN												
15...	1430	NO	NO	ND	ND	NO	ND	NO	ND	NO	NO	NO
AUG												
10...	1300	ND	--	ND	--	ND	--	NO	--	ND	--	ND

06130500 MUSSELSHELL RIVER AT MOSBY, MT--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DDT IN BOTTOM MATERIAL (UG/KG)	TOTAL DIAZINON (UG/L)	DIAZINON IN BOTTOM MATERIAL (UG/KG)	TOTAL DIELDRIN (UG/L)	DIELDRIN IN BOTTOM MATERIAL (UG/KG)	TOTAL ENDRIN (UG/L)	ENDRIN IN BOTTOM MATERIAL (UG/KG)	TOTAL ETHION (UG/L)	ETHION IN BOTTOM MATERIAL (UG/KG)	TOTAL HEPTACHLOR (UG/L)	HEPTACHLOR IN BOTTOM MATERIAL (UG/KG)	TOTAL HEPTACHLOR EPOXIDE (UG/L)
JAN 12...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND
JUN 15...	ND	ND	ND	ND	.1	ND	ND	ND	ND	ND	ND	ND
AUG 10...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	HEPTACHLOR EPOXIDE IN BOTTOM MATERIAL (UG/KG)	TOTAL LINDANE (UG/L)	LINDANE IN BOTTOM MATERIAL (UG/KG)	TOTAL MALATHION (UG/L)	MALATHION IN BOTTOM MATERIAL (UG/KG)	TOTAL METHOXYCHLOR (UG/L)	METHOXYCHLOR IN BOTTOM MATERIAL (UG/KG)	TOTAL METHYL PARATHION (UG/L)	METHYL PARATHION IN BOTTOM MATERIAL (UG/KG)	TOTAL METHYL TRITHION (UG/L)	METHYL TRITHION IN BOTTOM MATERIAL (UG/KG)	TOTAL PARATHION (UG/L)
JAN 12...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND
JUN 15...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG 10...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	PARATHION IN BOTTOM MATERIAL (UG/KG)	TOTAL TOXAPHENE (UG/L)	TOXAPHENE IN BOTTOM MATERIAL (UG/KG)	TOTAL TRITHION (UG/L)	TRITHION IN BOTTOM MATERIAL (UG/KG)	SIMAZINE IN BOTTOM MATERIAL (UG/KG DRY SOLIDS)	TOTAL 2,4-D (UG/L)	2,4-D IN BOTTOM MATERIAL (UG/KG)	TOTAL 2,4,5-T (UG/L)	2,4,5-T IN BOTTOM MATERIAL (UG/KG)	TOTAL SILVEX (UG/L)
JAN 12...	--	ND	--	ND	--	--	ND	--	ND	--	ND
JUN 15...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG 10...	--	ND	--	ND	--	--	ND	--	ND	--	ND

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .062 MM
OCT 07...	1500	12.0	245	37	24	58
NOV 11...	1500	1.0	323	44	38	74
JAN 12...	1430	.5	263	179	127	75
FEB 04...	1230	.5	452	246	300	92
MAR 03...	1300	.5	193	213	111	85
APR 06...	1600	15.5	291	76	60	81
MAY 11...	1430	17.0	2080	2850	16000	77
JUN 15...	1430	16.0	738	474	944	94
JUL 14...	1100	23.0	202	148	81	97
AUG 10...	1300	20.5	259	79	55	86
SEP 15...	1300	20.0	204	48	26	90

06130500 MUSSELSHELL RIVER AT MOSBY, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1670	2170	---	---	1440	1900	1800	1690	843	1290	2010	1540
2	1700	---	---	---	1510	1950	1830	2110	895	1380	1950	1570
3	1680	2060	---	1790	1480	1980	1880	2330	882	1360	2000	1550
4	1680	---	---	1840	1580	2190	1900	2350	910	1400	2000	1540
5	1690	---	2160	1940	1700	2020	1920	1680	980	1460	2020	1610
6	1770	2000	2010	1950	1770	2050	1940	1540	1000	1440	1950	---
7	1750	1950	1890	2030	1820	---	1940	1320	1100	1380	1750	1580
8	1730	---	1770	2100	1840	1950	1900	1200	1080	1300	1500	1530
9	1740	1870	1700	2140	1820	2000	1880	1150	1140	1280	1560	1540
10	1750	1810	1590	2160	1770	1990	---	1100	1500	1400	1550	1550
11	1760	1840	1540	2120	1760	1910	---	1050	1160	1380	1440	1540
12	1720	1850	1570	2130	1780	2010	1870	1020	1170	1490	1530	1520
13	1680	1840	1640	2170	1650	1990	1830	960	1300	1560	1550	1480
14	1680	1850	1660	2150	1650	1950	1680	915	1200	1590	1500	1470
15	1660	1890	1710	2120	1660	1900	1580	907	1180	1610	---	---
16	1640	---	1790	2050	1650	1810	1480	861	1430	1680	1530	1460
17	1650	1850	1880	2000	1650	1720	1440	872	1340	1720	1550	1430
18	1780	1830	---	---	1580	1660	1420	857	1400	1700	1550	1410
19	1750	---	---	1820	1580	1670	1410	832	1410	1760	1520	1400
20	1680	1840	2040	1730	1610	1680	1440	819	---	1800	1560	1390
21	1700	1850	---	1750	1680	1640	1480	819	1410	1890	1560	1410
22	1700	1890	1930	1700	1600	1540	1540	809	1420	1950	---	1420
23	1850	2030	1920	1640	1660	1480	1560	759	1440	2030	1590	1430
24	1800	---	1980	1590	1650	1390	1590	745	1450	1960	1580	---
25	1810	2090	1980	1660	1700	1460	1650	717	1460	---	---	1460
26	1830	---	1970	1580	---	1500	1720	727	1100	1950	1720	1500
27	1910	---	1890	1590	1660	1570	1790	729	1270	1900	1720	2000
28	1990	---	1840	1560	1700	1600	1800	721	1260	1910	1740	1720
29	2080	---	1820	1540	1770	1660	1780	741	1300	1940	1650	1670
30	2140	---	1800	1480	---	1720	---	772	1310	2000	1620	1700
31	2250	---	---	1460	---	1750	---	808	---	2040	1560	---
MONTH	1780	---	---	1850	1670	1790	1710	1090	1220	1650	1670	1530

YEAR MAX 2350 MIN 717 MEAN 1630

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	7.5	---	---	2.0	---	5.5	10.0	17.5	21.0	24.0	24.0
2	16.0	---	---	---	2.0	---	4.5	10.0	18.0	20.0	21.5	22.5
3	16.0	8.0	---	0.5	1.5	---	4.5	9.5	17.5	20.0	22.0	23.0
4	14.5	---	---	1.0	1.0	---	7.0	10.0	17.5	22.5	23.0	17.0
5	11.0	---	1.0	1.0	1.0	---	9.0	12.0	18.0	22.0	20.5	18.0
6	11.5	8.5	1.5	1.0	1.0	---	11.0	12.0	18.5	23.0	19.5	---
7	11.0	7.0	1.5	1.0	1.0	---	11.0	12.0	18.0	24.0	23.0	17.0
8	9.0	---	2.0	0.5	2.0	---	12.0	13.0	19.0	24.0	21.0	16.5
9	7.0	3.0	3.0	0.5	2.0	---	12.0	15.0	24.0	24.0	21.5	18.0
10	8.0	2.0	2.0	0.5	2.0	---	---	16.0	20.0	23.5	19.0	19.5
11	8.5	2.0	1.0	0.5	2.5	---	---	15.0	20.0	24.0	19.0	17.0
12	10.0	2.0	1.0	0.5	2.5	---	13.0	12.0	17.0	24.0	20.5	16.0
13	8.0	4.0	1.0	0.5	2.0	---	14.0	13.5	15.0	20.0	21.0	19.5
14	8.0	4.0	1.0	0.5	2.5	---	14.0	16.0	14.0	20.0	21.0	16.0
15	9.0	3.5	1.0	0.5	2.0	---	13.0	13.0	12.0	19.0	---	---
16	7.5	---	1.0	0.5	2.0	---	13.0	13.0	16.0	20.0	19.0	22.0
17	8.5	4.5	0.5	0.5	2.0	---	8.0	14.0	14.5	21.0	18.5	23.0
18	10.0	3.0	---	---	2.5	---	9.0	15.0	15.5	22.5	18.0	16.0
19	9.0	---	---	0.5	2.5	---	9.0	16.0	17.0	22.5	19.5	16.0
20	10.5	1.5	0.5	2.0	2.5	---	9.0	16.5	---	20.0	25.0	18.5
21	9.0	2.0	---	2.0	2.0	4.0	9.5	16.0	19.0	22.0	20.0	19.0
22	7.0	1.5	2.0	2.0	2.5	4.0	9.0	17.0	20.0	22.0	---	19.0
23	7.0	1.0	2.0	2.0	3.0	4.0	9.5	17.0	17.0	21.0	22.5	19.0
24	5.0	---	2.0	2.0	2.0	4.5	9.0	16.0	16.0	23.0	23.5	---
25	6.0	1.0	2.5	1.5	3.0	5.5	10.0	17.0	16.0	---	---	17.0
26	6.0	---	2.0	1.5	---	5.0	9.5	14.0	15.0	22.0	---	18.0
27	5.0	---	2.0	1.0	2.5	6.0	7.0	15.0	14.5	23.0	19.5	17.5
28	4.0	---	1.0	2.0	2.5	5.5	7.0	17.5	17.0	19.0	17.0	18.0
29	6.0	---	2.0	2.0	2.0	5.5	7.0	16.5	18.0	19.0	17.0	19.0
30	4.5	---	2.0	2.0	---	5.5	---	17.0	19.0	20.0	21.5	15.0
31	7.0	---	---	2.0	---	5.5	---	18.0	---	21.0	24.5	---
MONTH	9.0	---	---	1.0	2.0	---	9.5	14.5	17.5	21.5	21.0	18.5

YEAR MAX 25.0 MIN 0.5 MEAN 11.0

06130500 MUSSELSHELL RIVER AT MOSBY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON

Date	Length of exposure (days)	Biomass (g/m^2) Dry weight	Ash weight	Chlorophyll a (mg/m^2)	Chlorophyll b (mg/m^2)	Biomass pigment ratio	Sampling method
Nov 11	35	95.0	89.0	2.30	.000	2900	Polyethylene strip
Sep 15	36	24.8	22.5	2.42	.014	920	

PHYTOPLANKTON
OCT. 7, 1975
1500 HOURS
2,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		26	1	
	...SCENEDESMACEAE				
L	....SCENEDESMUS			0	
		TOTALS	26	1	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		280	14	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		26	1	
	...NAVICULACEAE	NAVICULOID			
L	....NAVICULA			0	
	....NEIDIUM		180	9	
	...NITZSCHIACEAE				
D	....NITZSCHIA		470	24	
		TOTALS	960	48	1.621=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
D	....TRACHELOMONAS		980	50	
		TOTALS	980	50	0.000=DIVERSITY

NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:

PHYL/DIV	1.088
CLASS	1.088
ORDER	1.088
FAMILY	1.877
GENERA	1.877

NOV. 11, 1975
1500 HOURS
6,500 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		220	3	
	....SELENASTRUM		880	13	
		TOTALS	1,100	16	0.722=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		430	7	
	...CYMBELLACEAE				
	....CYMBELLA		220	3	
	...DIATOMACEAE				
D	....DIATOMA		1,300	20	
	...FRAGILARIACEAE				
	....SYNEDRA		220	3	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		220	3	
	...NITZSCHIACEAE				
D	....NITZSCHIA		3,000	47	
		TOTALS	5,400	83	1.811=DIVERSITY

PHYL/DIV	0.650
CLASS	0.650
ORDER	0.650
FAMILY	2.159
GENERA	2.280

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

DEC. 16, 1975
1500 HOURS
48 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
L	....OOCYSTIS			0	
	...SCENEDESMACEAE				
	....SCENEDESMUS		2	5	
		TOTALS	2	5	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		1	3	
	...CYMBELLACEAE				
	....CYMBELLA		1	3	
	...FRAGILARIACEAE				
D	....SYNEDRA		8	18	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		2	5	
	...NAVICULACEAE	NAVICULOID			
L	....AMPHIPRORA			0	
D	....NAVICULA		13	28	
L	....PINNULARIA			0	
	...NITZSCHIACEAE				
D	....NITZSCHIA		16	33	
		TOTALS	42	90	2.049=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..CHROOCOCCALES	COCCOID			
	...CHROOCOCCACEAE				
	....ANACYSTIS		4	8	
		TOTALS	4	8	0.000=DIVERSITY

PHYL/DIV 0.665
CLASS 0.665
ORDER 0.665
FAMILY 2.458
GENERA 2.458

JAN. 12, 1976
1430 HOURS
570 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...SCENEDESMACEAE				
	....SCENEDESMUS		35	6	
		TOTALS	35	6	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		110	19	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		35	6	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		71	12	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		35	6	
	...NITZSCHIACEAE				
D	....NITZSCHIA		250	44	
	...SURIRELLACEAE				
	....SURIRELLA		35	6	
		TOTALS	530	93	2.146=DIVERSITY

PHYL/DIV 0.337
CLASS 0.337
ORDER 1.014
FAMILY 2.350
GENERA 2.350

06130500 MUSSELSHELL RIVER AT MOSBY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
FEB. 4, 1976
1230 HOURS
1,200 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		27	2	
		TOTALS	27	2	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
O	....CYCLOTELLA		240	21	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		110	9	
	....COCCONEIS		27	2	
	...CYMBELLACEAE				
	....CYMBELLA		27	2	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		110	9	
	...NITZSCHIACEAE				
O	....NITZSCHIA		590	51	
	...TABELLARIACEAE				
	....TABELLARIA		27	2	
		TOTALS	1,100	96	1.996=DIVERSITY

PHYL/DIV 0.159
CLASS 0.159
ORDER 0.892
FAMILY 2.025
GENERA 2.109

MAR. 3, 1976
1300 HOURS
860 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		96	11	
	...SCENEDESMACEAE				
	....SCENEDESMUS		77	9	
		TOTALS	170	20	0.991=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
O	....CYCLOTELLA		360	42	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		58	7	
	...CYMBELLACEAE				
	....CYMBELLA		19	2	
	...DIATOMACEAE				
	....DIATOMA		38	4	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		19	2	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		19	2	
	...NITZSCHIACEAE				
O	....NITZSCHIA		150	18	
	...SURIRELLACEAE				
	....SURIRELLA		19	2	
		TOTALS	690	79	2.074=DIVERSITY

PHYL/DIV 0.722
CLASS 0.722
ORDER 1.520
FAMILY 2.579
GENERA 2.579

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
APR. 6, 1976
1600 HOURS
1,700 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
L	....ANKISTRODESMUS			0	
	...SCENEDESMACEAE				
L	....SCENEDESMUS			0	
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		54	3	
		TOTALS	54	3	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		270	16	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
D	....ACHNANTHES		970	58	
	....COCCONEIS		54	3	
	...CYMBELLACEAE				
L	....AMPHORA			0	
L	....CYMBELLA			0	
	...DIATOMACEAE				
L	....DIATOMA			0	
	...FRAGILARIACEAE				
L	....SYNEDRA			0	
	...NAVICULACEAE	NAVICULOID			
L	....CALONEIS			0	
	....NAVICULA		160	10	
	...NITZSCHIACEAE				
	....NITZSCHIA		160	10	
	...SURIRELLACEAE				
L	....SURIRELLA			0	
		TOTALS	1,600	97	1.701=DIVERSITY
	PYRRHOPHYTA	FIRE ALGAE			
	.DINOPHYCEAE	DINOFLAGELLATES			
	..PERIDINIALES				
	...GLENODINIACEAE				
L	....GLENODINIUM			0	

PHYL/DIV 0.206
CLASS 0.206
ORDER 0.835
FAMILY 1.669
GENERA 1.852

MAY 11, 1976
1430 HOURS
6,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		110	2	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		560	9	
	...NITZSCHIACEAE				
	....NITZSCHIA		450	8	
		TOTALS	1,100	19	1.361=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
D	....OSCILLATORIA		4,700	79	
		TOTALS	4,700	79	0.000=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
	....TRACHELOMONAS		110	2	
		TOTALS	110	2	0.000=DIVERSITY

PHYL/DIV 0.828
CLASS 0.828
ORDER 0.828
FAMILY 1.085
GENERA 1.085

06130500 MUSSELSHELL RIVER AT MOSBY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
JUNE 15, 1976
1430 HOURS
2,400 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		110	5	
		TOTALS	110	5	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		110	5	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		320	14	
	...NITZSCHIACEAE				
D	....NITZSCHIA		1,700	73	
	...SURIRELLACEAE				
	....SURIRELLA		110	5	
		TOTALS	2,300	97	1.118=DIVERSITY

PHYL/DIV 0.267
CLASS 0.267
ORDER 0.267
FAMILY 1.334
GENERA 1.334

JULY 14, 1976
1100 HOURS
4,200 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
D	....ANKISTRODESMUS		1,800	42	
	....SELENASTRUM		120	3	
	...SCENEDESMACEAE				
D	....SCENEDESMUS		710	17	
		TOTALS	2,600	62	1.091=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		240	6	
	..PENNALES	PENNATE			
	...CYMBELLACEAE				
	....CYMBELLA		120	3	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		240	6	
	...NITZSCHIACEAE				
D	....NITZSCHIA		940	22	
		TOTALS	1,500	37	1.547=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.CRYPTOPHYCEAE	CRYPTOMONADS			
	..CRYPTOMONIDALES				
	...CRYPTOMONADACEAE				
	....CRYPTOMONAS		120	3	
		TOTALS	120	3	0.000=DIVERSITY

PHYL/DIV 1.108
CLASS 1.108
ORDER 1.332
FAMILY 2.184
GENERA 2.333

06130500 MUSSELSHELL RIVER AT MOSBY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
AUG. 10, 1976
1300 HOURS
8,300 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...CHARACIACEAE				
	....SCHROEDERIA		160	2	
	...OOCYSTACEAE				
D	....ANKISTRODESMUS		2,000	25	
	....CHODATELLA		160	2	
	...SCENEDESMACEAE				
O	....CRUCIGENIA		1,900	23	
D	....SCENEDESMUS		1,200	15	
		TOTALS	5,500	67	1.840=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....MELOSIRA		160	2	
	..PENNALES	PENNATE			
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		160	2	
	...NITZSCHIACEAE				
D	....NITZSCHIA		2,500	30	
		TOTALS	2,800	34	0.614=DIVERSITY

PHYL/DIV 0.924
CLASS 0.924
ORDER 1.030
FAMILY 1.884
GENERA 2.348

SEP. 15, 1976
1300 HOURS
6,400 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...MICRACTINIACEAE				
	....MICRACTINIUM		83	1	
	...OOCYSTACEAE				
	....ANKISTRODESMUS		83	1	
	...SCENEDESMACEAE				
	....SCENEDESMUS		250	4	
		TOTALS	420	6	1.371=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		3,400	53	
	....MELOSIRA		83	1	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		250	4	
	...CYMBELLACEAE				
L	....CYMBELLA			0	
	...NAVICULACEAE	NAVICULOID			
	....CALONEIS		170	3	
	....DIPLONEIS		83	1	
	....NAVICULA		250	4	
	...NITZSCHIACEAE				
D	....NITZSCHIA		1,100	17	
		TOTALS	5,300	83	1.636=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..CHROOCOCCALES	COCCOID			
	...CHROOCOCCACEAE				
	....ANACYSTIS		580	9	
		TOTALS	580	9	0.000=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
	....TRACHELOMONAS		83	1	
		TOTALS	83	1	0.000=DIVERSITY

PHYL/DIV 0.874
CLASS 0.874
ORDER 1.645
FAMILY 2.121
GENERA 2.323

06130680 BIG DRY CREEK AT JORDAN, MT

LOCATION.--Lat 47°18'56", long 106°54'33", in SW¼NE¼SW¼ sec.17, T.18 N., R.38 E., Garfield County, Hydrologic Unit 10040105, at bridge on State Highway 200 at Jordan.
DRAINAGE AREA.--521 mi² (1,349 km²).
PERIOD OF RECORD.--October 1975 to September 1976.
REMARKS.--June 21 sample taken 10 miles (16 km) downstream.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
APR											
06...	1200	.51	1680	8.5	19.0	12.0	40	8.8	90	140	0
JUN											
21...	1430	7.4	1020	8.1	26.0	23.5	140	7.2	94	94	0

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
APR											
06...	31	15	330	12	4.3	377	0	520	10	.3	.9
JUN											
21...	24	8.2	190	8.5	5.7	256	0	260	5.1	.2	8.0

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)
APR											
06...	1100	1.50	1.51	.00	.04	.74	.78	.78	.10	130	80
JUN											
21...	628	.85	12.5	.08	.05	.95	1.0	1.1	.19	110	130

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	DISSOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)
APR											
06...	1200	1600	30	1	0	10	0	<10	0	10	0
JUN											
21...	1430	--	140	--	1	--	0	--	1	--	<10

DATE	TOTAL COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	DISSOLVED LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)
APR										
06...	<10	2	2000	<100	4	30	20	250	40	.1
JUN										
21...	--	20	--	--	3	--	10	--	7	--

DATE	DISSOLVED MERCURY (HG) (UG/L)	TOTAL MOLYBDENUM (MO) (UG/L)	DISSOLVED MOLYBDENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DISSOLVED NICKEL (NI) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	DISSOLVED VANADIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
APR										
06...	.1	1	1	<50	4	0	0	.5	10	10
JUN										
21...	<.5	--	2	--	6	--	0	.6	--	30

06130680 BIG DRY CREEK AT JORDAN, MT--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
APR					
06...	1200	12.0	.51	68	.09
JUN					
21...	1430	23.5	7.4	263	5.3

06130950 LITTLE DRY CREEK NEAR VAN NORMAN, MT

LOCATION.--Lat 47°20'22", long 106°21'47", in NE¼NE¼NE¼ sec.9, T.18 N., R.42 E., Garfield County, Hydrologic Unit 10040106, at bridge on State Highway 200, 0.8 mi (1.3 km) upstream from mouth, 1.5 mi (2.4 km) southeast of Van Norman.

DRAINAGE AREA.--1,224 mi² (3,170 km²).

PERIOD OF RECORD.--October 1975 to September 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT											
07...	1030	1.0	2700	8.6	10.5	9.0	25	9.6	90	220	0
DEC											
16...	1030	32	695	8.2	-10.0	.0	150	10.1	75	74	0
JUN											
15...	1500	224	860	8.3	22.0	16.0	2300	8.1	89	70	0
SEP											
20...	1500	1.4	2800	7.9	24.0	18.5	20	8.7	97	220	0

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
OCT											
07...	32	34	590	17	7.6	540	17	1000	13	.3	.5
DEC											
16...	19	6.5	120	6.1	5.2	225	0	160	3.5	.2	7.3
JUN											
15...	17	6.6	180	9.4	5.6	276	0	220	3.3	.2	6.5
SEP											
20...	28	37	600	18	12	599	0	1100	15	.4	.8

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)
OCT											
07...	1960	2.67	5.29	.29	.04	.73	.77	1.1	.04	320	30
DEC											
16...	433	.59	37.4	.10	.03	1.9	1.9	2.0	.24	150	120
JUN											
15...	576	.78	348	.72	.04	4.1	4.1	4.8	2.3	160	510
SEP											
20...	2090	2.84	7.90	.33	.03	.80	.83	1.2	.05	360	20

06130950 LITTLE DRY CREEK NEAR VAN NORMAN, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	DISSOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)
OCT											
07...	1030	720	0	1	1	10	10	10	1	10	10
DEC											
16...	1030	--	140	--	0	--	0	--	1	--	0
JUN											
15...	1500	60000	170	50	0	10	0	1	0	100	<10
SEP											
20...	1500	570	20	1	1	0	0	10	0	0	0

DATE	TOTAL COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	DISSOLVED LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)
OCT										
07...	<10	11	810	<100	3	40	50	60	10	.2
DEC										
16...	--	9	--	--	5	--	10	--	0	--
JUN										
15...	170	10	81000	73	2	60	10	1500	10	<.5
SEP										
20...	<10	4	670	<100	1	40	50	60	10	.1

DATE	DISSOLVED MERCURY (HG) (UG/L)	TOTAL MOLYBDENUM (MO) (UG/L)	DISSOLVED MOLYBDENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DISSOLVED NICKEL (NI) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	DISSOLVED VANADIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT										
07...	.2	4	<2	50	3	1	0	.2	10	10
DEC										
16...	.2	--	1	--	5	--	0	2.3	--	20
JUN										
15...	<.5	--	<2	130	4	0	0	.0	370	20
SEP										
20...	.2	3	<2	50	2	1	1	6.0	0	0

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
OCT					
07...	1030	9.0	1.0	142	.38
DEC					
16...	1030	.0	32	300	26
JUN					
15...	1500	16.0	224	3850	2330
SEP					
20...	1500	18.5	1.4	93	.35

06131000 BIG DRY CREEK NEAR VAN NORMAN, MT

LOCATION.--Lat 47°20'57", long 106°21'33", in NW¼SE¼NW¼ sec.3, T.18 N., R.42 E., Garfield County, Hydrologic Unit 10040105, on left bank 500 ft (150 m) downstream from Little Dry Creek, 3.2 mi (5.1 km) northeast of Van Norman Post Office, and 26 mi (42 km) east of Jordan.

DRAINAGE AREA.--2,554 mi^2 (6,615 km^2).

PERIOD OF RECORD.--October 1939 to July 1969, July 1970 to current year (discharge measurements only, October 1947 to March 1949). Prior to July 1970, published as "Dry Creek near Van Norman".

REVISED RECORDS.--WSP 1309: 1947(M). WSP 1559: 1944(M), 1947. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 2,330 ft (710 m), by barometer.

REMARKS.--Records poor. Few small diversions for irrigation of hay meadows above station.

AVERAGE DISCHARGE.--33 years (1939-47, 1949-68, 1970-76), 52.4 ft^3/s (1.484 m^3/s), 37,960 acre-ft/yr (46.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,600 ft^3/s (697 m^3/s) Mar. 21, 1947, gage height, 13.39 ft (4.081 m); maximum gage height, 15.26 ft (4.651 m) Mar. 21, 1947 (ice jam); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 400 ft^3/s (11.3 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Jan. 31	1830	ice jam		*4.79	1.460	June 23	0100	684	19.4	3.02	0.921
June 12	1830	*1220	34.6	3.66	1.116	Aug. 8	0100	1170	33.1	3.56	1.085

Minimum daily discharge, 0.60 ft^3/s (0.017 m^3/s) Jan. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	5.4	2.0	16	190	50	11	9.2	3.5	24	3.3	2.1
2	3.5	5.2	4.0	9.0	170	46	13	5.8	3.3	16	3.1	1.5
3	3.8	5.2	10	4.0	160	43	13	9.2	3.3	15	2.9	1.7
4	3.8	5.0	45	3.0	140	41	10	9.2	3.8	11	3.4	1.7
5	3.8	4.6	50	4.0	110	37	9.0	9.0	3.8	9.6	6.4	1.5
6	4.0	4.5	45	4.0	100	39	10	8.6	4.1	8.0	5.8	1.4
7	4.0	4.2	40	2.0	110	41	10	6.4	7.2	8.6	24	1.4
8	69	4.0	45	.90	125	43	8.0	6.0	17	11	219	1.4
9	23	3.7	47	.80	140	45	7.6	7.6	38	14	23	1.4
10	11	3.5	44	.60	110	42	6.0	7.2	19	12	3.6	1.5
11	8.0	3.2	42	.80	115	40	7.2	7.2	23	15	5.0	1.5
12	10	2.8	39	2.2	125	39	7.6	7.6	589	6.8	11	1.2
13	8.4	2.2	38	1.6	115	38	7.2	7.2	435	6.4	7.2	1.4
14	32	4.0	36	2.0	110	37	6.8	7.6	351	5.8	4.3	1.4
15	17	5.8	35	2.8	115	36	7.2	6.0	332	8.0	4.0	1.2
16	9.6	5.6	34	6.0	115	40	7.6	7.2	213	5.8	4.3	1.2
17	11	5.0	30	23	110	45	7.6	6.8	134	5.0	4.4	1.2
18	8.8	4.0	32	21	105	57	8.0	6.4	86	5.3	3.5	1.1
19	6.0	3.6	35	20	100	64	10	6.4	59	4.8	3.3	1.4
20	7.2	3.2	36	23	92	62	9.6	5.3	49	4.8	2.7	1.4
21	6.4	2.8	37	22	90	57	9.2	5.8	34	4.5	2.9	1.4
22	7.2	2.2	33	25	84	54	9.0	36	76	4.3	2.7	1.4
23	7.0	1.0	30	24	80	51	11	12	370	4.0	3.5	1.4
24	7.0	1.0	31	22	75	33	11	5.3	278	3.6	3.6	1.4
25	6.0	.50	33	21	70	23	10	4.5	173	3.5	2.3	1.5
26	6.5	.80	35	19	65	18	10	3.8	100	3.8	1.9	1.5
27	6.5	1.0	34	60	55	17	12	4.0	71	4.3	1.7	1.5
28	6.2	1.0	36	300	54	14	11	4.3	51	4.3	2.1	1.5
29	6.0	1.2	32	250	52	14	10	4.0	33	4.0	1.9	1.5
30	6.0	1.2	30	230	---	16	9.6	3.5	27	3.5	2.1	1.4
31	5.7	---	25	200	---	12	---	3.5	---	3.3	2.1	---
TOTAL	320.5	97.70	1045.0	1321.70	3062	1194	283.2	244.9	3587.0	241.6	377.6	43.1
MEAN	10.3	3.26	33.7	42.6	106	38.5	9.44	7.90	120	7.79	12.2	1.44
MAX	69	5.6	50	300	190	64	13	36	589	24	219	2.1
MIN	3.3	.80	2.0	.60	52	12	6.6	3.5	3.3	3.3	1.7	1.1
AC-FT	636	194	2070	2620	6110	2370	562	486	7110	479	748	85

CAL YR 1975 TOTAL 15492.00 MEAN 42.4 MAX 4710 MIN 0 AC-FT 30730
WTR YR 1976 TOTAL 11837.70 MEAN 32.3 MAX 589 MIN .60 AC-FT 23480

06131120 TIMBER CREEK NEAR VAN NORMAN, MT

LOCATION.--Lat 47°24'.0", long 106°10'25", in E½ sec.13, McCone County, Hydrologic Unit 10040104, at bridge on State Highway 24, and 11.8 mi (19.0 km) northeast of Van Norman.

DRAINAGE AREA.--287 mi^2 (743 km^2).

PERIOD OF RECORD.--October 1975 to September 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
MAR											
17...	1230	3.5	1850	8.3	4.0	1.0	15	9.6	74	260	0
APR											
28...	1000	.76	3010	8.6	8.0	6.5	25	9.2	81	390	0
JUN											
14...	1230	21	2620	8.9	15.0	14.5	250	7.2	77	300	42

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
MAR											
17...	37	40	300	8.1	8.5	387	0	590	4.8	.2	5.9
APR											
28...	52	63	590	13	9.1	623	22	1000	9.3	.4	1.0
JUN											
14...	33	52	490	12	7.5	310	0	1000	3.4	.2	4.6

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)
MAR											
17...	1180	1.60	11.2	.01	.05	2.1	2.1	2.1	.06	540	170
APR											
28...	2060	2.80	4.23	.00	.01	1.1	1.1	1.1	.05	840	70
JUN											
14...	1740	2.37	98.7	.26	.13	1.2	1.3	1.6	.27	430	130

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	DISSOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)
MAR											
17...	1230	--	10	--	1	--	0	--	0	--	0
APR											
28...	1000	700	10	1	1	10	0	<10	0	0	0
JUN											
14...	1230	6000	50	9	5	10	0	0	0	<10	<10

DATE	TOTAL COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	DISSOLVED LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)
MAR										
17...	--	3	--	--	3	--	20	--	60	--
APR										
28...	10	3	940	<100	2	30	40	90	10	.0
JUN										
14...	20	10	8400	13	3	<0	20	190	10	<.5

06131120 TIMBER CREEK NEAR VAN NORMAN, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
MAR										
17...	.0	--	2	--	4	--	0	1.3	--	20
APR										
28...	.0	4	4	50	7	0	0	3.4	10	0
JUN										
14...	<.5	3	4	19	4	0	0	.6	50	10

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
MAR					
17...	1230	1.0	3.5	45	.43
APR					
28...	1000	6.5	.76	150	.31
JUN					
14...	1230	14.5	21	518	29

06131200 NELSON CREEK NEAR VAN NORMAN, MT

LOCATION.--Lat 47°32'08", long 106°09'11", in SW¼NW¼ sec.36, T.21 N., R.43 E., McCone County, Hydrologic Unit 10040104, on left bank at upstream side of bridge on State Highway 24, 1.5 mi (2.4 km) upstream from Fort Peck Lake, and 19 mi (30 km) northeast of Van Norman.

DRAINAGE AREA.--100.2 mi^2 (259.5 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1975 to September 1976.

GAGE.--Water-stage recorder. Altitude of gage is 2,300 ft (701 m) from topographic map.

REMARKS.--Water-discharge records fair except those for winter period, which are poor. No gage-height record Dec. 23 to Jan. 26. Diversions for irrigation of 163 acres (660,000 m^2) above station of which 158 acres (640,000 m^2) is flood irrigated. Some storage in stock ponds upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 933 ft^3/s (26.4 m^3/s) July 2, gage height, 7.60 ft (2.316 m); no flow on many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.10	0	0	6.0	0	.70	.10	0	.20	0	
2	0	.10	0	0	5.0	0	.60	0	0	93	0	
3	0	.10	0	0	2.8	0	.50	0	0	1.9	0	
4	0	.20	.10	0	.60	0	.50	0	0	.60	0	
5	0	.20	1.0	0	0	0	.60	0	0	.50	0	
6	0	.20	.80	0	0	0	.50	0	0	.40	0	
7	0	.10	.70	0	0	.10	.30	0	.80	0	0	
8	.10	.10	.60	0	3.5	.40	.30	0	.80	0	0	
9	.50	.10	.40	0	8.0	2.0	.30	0	.20	0	0	
10	1.9	0	.20	0	3.5	2.5	.30	0	0	0	0	
11	.80	0	.10	0	6.0	1.4	.20	0	0	0	3.6	
12	.40	0	.10	0	5.0	.40	.20	0	0	0	2.2	
13	.20	0	0	0	5.5	.60	.20	0	0	0	1.0	
14	3.9	0	0	0	6.0	.20	.20	0	66	0	0	
15	3.8	0	0	0	4.5	.60	.10	0	7.2	0	0	
16	1.2	0	0	0	3.4	3.0	.10	0	1.8	0	0	
17	.80	0	0	0	2.5	8.0	.10	0	1.4	0	0	
18	.70	0	0	0	2.0	5.5	.10	0	1.2	0	0	
19	.50	0	.20	0	1.4	3.2	.20	0	1.0	0	0	
20	.30	0	.40	0	.80	2.0	.30	0	.80	0	0	
21	.20	0	.20	0	.80	1.6	.30	0	.80	0	0	
22	.20	0	0	0	2.0	1.4	.30	0	8.2	0	0	
23	.40	0	0	0	7.5	1.3	.60	0	2.9	0	0	
24	.30	0	0	0	7.0	1.2	.60	0	1.7	0	0	
25	.20	0	0	0	6.5	1.0	.50	0	3.1	0	0	
26	.30	0	0	0	3.5	.90	.30	0	1.1	0	0	
27	.20	0	0	0	1.8	.80	.20	0	1.0	0	0	
28	.20	0	0	1.4	.80	.80	.10	0	.70	0	0	
29	.20	0	0	3.0	.30	.60	.10	0	.40	0	0	
30	.10	0	0	10	---	.50	.10	0	.30	0	0	
31	.10	---	0	4.0	---	.70	---	0	---	0	0	---
TOTAL	17.50	1.20	4.80	18.4	96.70	40.70	9.40	.10	101.00	96.60	6.8	0
MEAN	.56	.040	.15	.59	3.33	1.31	.31	.003	3.37	3.12	.22	0
MAX	3.9	.20	1.0	10	8.0	8.0	.70	.10	66	93	3.6	0
MIN	0	0	0	0	0	0	.10	0	0	0	0	0
AC-FT	35	2.4	9.5	36	192	81	19	.2	200	192	13	0

WTR YR 1976 TOTAL 393.20 MEAN 1.07 MAX 93 MIN 0 AC-FT 780

06131200 NELSON CREEK NEAR VAN NORMAN, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1975 to September 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
16...	1300	1.1	1850	8.7	9.0	6.0	310	10.4	90	5.0	160	0
DEC												
10...	1100	.23	3250	8.6	-10.0	.5	30	10.2	76	3.0	340	0
FEB												
25...	1230	4.1	995	8.4	12.0	.0	130	9.2	69	3.2	120	0
MAR												
17...	1630	7.7	1380	8.0	14.0	1.0	160	8.4	64	5.1	210	0
APR												
27...	1230	.12	5850	8.6	11.5	8.0	20	9.8	90	--	770	70
JUN												
16...	1030	1.6	1490	8.0	19.0	18.0	170	7.0	81	2.2	140	0

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
OCT											
16...	28	21	340	12	6.4	282	0	680	7.6	.3	3.9
DEC											
10...	39	59	700	17	9.1	546	0	1300	12	.1	.1
FEB											
25...	23	16	140	5.5	4.9	209	0	260	3.1	.2	5.3
MAR											
17...	33	30	230	7.0	6.9	262	0	470	3.1	.2	7.8
APR											
27...	95	130	1200	19	10	783	36	2700	13	.4	1.6
JUN											
16...	33	15	280	10	5.3	218	0	610	3.1	.4	6.7

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)
OCT											
16...	1230	1.67	3.65	.63	.06	1.4	1.5	2.1	.20	310	50
DEC											
10...	2390	3.25	1.48	.19	.01	1.7	1.7	1.9	.02	560	140
FEB											
25...	556	.76	6.16	.04	.05	1.3	1.3	1.3	.19	190	110
MAR											
17...	911	1.24	18.9	.08	.09	2.5	2.6	2.7	.18	310	100
APR											
27...	4570	6.22	1.48	.01	.00	1.2	1.2	1.2	.05	810	60
JUN											
16...	1060	1.44	4.58	.47	.04	.69	.73	1.2	.25	220	100

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	DISSOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)
OCT											
16...	1300	15000	10	7	2	10	10	20	3	70	0
DEC											
10...	1100	410	--	1	--	10	--	<10	--	10	--
MAR											
17...	1630	3800	--	4	--	0	--	10	--	10	--
JUN											
16...	1030	5400	--	5	--	10	--	0	--	20	--

06131200 NELSON CREEK NEAR VAN NORMAN, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)
OCT										
16...	50	12	20000	<100	2	40	20	280	20	.4
DEC										
10...	20	--	1900	<100	--	40	--	170	--	.0
MAR										
17...	10	--	5500	<100	--	30	--	170	--	.0
JUN										
16...	10	--	6200	10	--	20	--	140	--	<.5

DATE	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
16...	.4	0	2	<50	7	0	2	2.5	110	20
DEC										
10...	--	3	--	50	--	1	--	--	80	--
MAR										
17...	--	1	--	<50	--	0	--	--	30	--
JUN										
16...	--	1	--	19	--	3	--	--	50	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
OCT					
16...	1300	6.0	1.1	411	1.2
FEB					
25...	1230	.0	4.1	189	2.1
MAR					
17...	1630	1.0	7.7	284	5.9
APR					
27...	1230	8.0	.12	176	.06
JUN					
16...	1030	18.0	1.6	356	1.5

06131500 FORT PECK LAKE AT FORT PECK, MT

LOCATION.--Lat 48°00'26", long 106°23'49", in sec.14, T.26 N., R.41 E., McCone County, Hydrologic Unit 10040104, in No. 4 emergency gate shaft of Fort Peck Dam on Missouri River at Fort Peck, 2 mi (3 km) downstream from Bear Creek, 9.5 mi (15.3 km) southwest of Naushua, 9.5 mi (15.3 km) upstream from Milk River, and at mile 1,771.6 (2,850.5 km).

DRAINAGE AREA.--57,500 mi^2 (148,900 km^2).

PERIOD OF RECORD.--October 1937 to current year. (monthend contents only, except October 1938 to September 1940, when daily elevations were included). Monthend contents for October 1937 to August 1938, published only in WSP 1309. Daily elevations and contents for May to June 1964, published in WSP 1840-B. Prior to October 1970, published as "Fort Peck Reservoir". Daily elevations on file in Helena district office.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. Prior to May 1, 1941, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill dam completed in 1939; storage began in 1937. The following capacity figures are from capacity table effective July 1, 1973; see previous reports for superseded figures. Total capacity, 18,910,000 acre-ft (23.3 km^3) between elevation 2,095.00 ft (638.556 m), invert of lower ring gates, and 2,250.00 ft (685.800 m), top of 25 ft (7.6 m) gates. Elevation of spillway crest, 2,225.00 ft (678.180 m). Normal operating level, 17,930,000 acre-ft (22.1 km^3), elevation, 2,246.00 ft (684.458 m). Dead storage, 542,800 acre-ft (669 hm^3) below elevation 2,095.00 ft (638.556 m). Minimum operating level, 4,283,000 acre-ft (5.28 km^3), elevation, 2,160.00 ft (658.368 m), for on-site power generation. Figures given herein represent total contents; usable contents published in previous water-supply papers for October 1950 to September 1955. Water is used for navigation, recreation, flood control, and power generation. Elevations materially affected by wind.

COOPERATION.--Elevations and capacity furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 19,310,000 acre-ft (23.8 km^3) July 15-17, 1975 (elevation, 2,251.6 ft or 686.29 m); minimum since first filling, 5,061,000 acre-ft (6.24 km^3) Jan. 25, 26, 1956 (elevation, 2,167.67 ft or 660.611 m), by capicity table used Mar. 1, 1940, to Dec. 31, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum contents at 2400, 18,660,000 acre-ft (23.0 km^3) July 4, 8, 9, 12 (elevation, 2,249.0 ft or 685.50 m); minimum, 17,220,000 acre-ft (21.2 km^3) Mar. 8-12, 14-18 (elevation, 2,243.0 ft or 683.67 m).

MONTHEND ELEVATION AND CONTENTS AT 2400; WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Elevation (feet)	Contents (acre-feet)	Change in Conents (acre-feet)
Sept. 30	2,247.2	18,221,266	--
Oct. 31	2,246.1	17,956,051	-260,000
Nov. 30	2,245.3	17,765,144	-190,000
Dec. 31	2,245.0	17,693,642	- 80,000
CAL YR 1975			+1,400,000
Jan. 31	2,244.3	17,528,414	-160,000
Feb. 29	2,243.5	17,340,731	-190,000
Mar. 31	2,243.5	17,340,731	0
Apr. 30	2,243.9	17,434,228	+ 90,000
May 31	2,247.7	18,342,765	+910,000
June 30	2,248.4	18,513,804	+170,000
July 31	2,247.9	18,391,366	-120,000
Aug. 31	2,246.5	18,052,321	-340,000
Sept. 31	2,244.7	17,622,830	-430,000
WTR YR 1976			-600,000

06132000 MISSOURI RIVER BELOW FORT PECK DAM, MT

LOCATION.--Lat 48°02'39", long 106°21'21", in NW¼ sec.6, T.26 N., R.42 E., McCone County, Hydrologic Unit 10060001, on right bank 2 mi (3 km) upstream from Milk River, 6 mi (10 km) south of Nashua, 8 mi (13 km) downstream from Fort Peck Dam, and at mile 1,763.5 (2,837.5 km).

DRAINAGE AREA.--57,556 mi^2 (149,070 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1934 to current year.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,018.00 ft (615.086 m) above mean sea level (Corps of Engineers bench mark). Prior to Apr. 14, 1938, at site 0.7 mi (1.1 km) upstream at different datum; Apr. 14, 1938, to Sept. 30, 1963, at present site at datum 2.00 ft (0.610 m) higher, all water-stage recorders. Since Oct. 1, 1969, published discharge is determined by flowmeters at Fort Peck Dam.

REMARKS.--Water-discharge records good. Flow completely regulated by Fort Peck Lake (see preceding page). Diversions for irrigation of about 880,400 acres (3,560 km^2) above station.

COOPERATION.--Records since Oct. 1, 1969, furnished by Corps of Engineers; 4 discharge measurements made and records reviewed by Geological Survey. Records for March 1934 to September 1969 collected and computed by Geological Survey.

AVERAGE DISCHARGE.--5 years (1934-39, prior to Fort Peck Lake reaching operational level), 6,347 ft^3/s (179.7 m^3/s), 4,598,000 acre-ft/yr (5.67 km^3/yr); 33 years (1943-76, after operational level in Fort Peck Lake was reached), 9,815 ft^3/s (278.0 m^3/s), 7,111,000 acre-ft/yr (8.77 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,000 ft^3/s (1,440 m^3/s) including 32,000 ft^3/s (906 m^3/s) inflow from spillway 1 mi (2 km) downstream from station, Aug. 8, 1946; maximum gage height observed, 12.30 ft (3.749 m) Mar. 10, 1936 (ice jam), site and datum then in use; maximum daily reverse flow, 400 ft^3/s (11.3 m^3/s) Mar. 29, 1943 (backwater from Milk River).

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 25,500 ft^3/s (722 m^3/s) June 12; minimum daily, 9,000 ft^3/s (255 m^3/s) Mar. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14400	14800	9700	12200	14900	14900	11000	14800	20300	14400	14700	14800
2	14400	14900	9700	12200	14800	14800	12400	14800	22600	14800	14600	14800
3	14400	14800	10300	9900	14900	14900	14800	12000	24900	14500	14700	14800
4	14400	14800	10600	9800	14900	14800	14800	11000	25000	14300	14600	14800
5	14400	14800	11100	11100	14800	14800	14800	11000	25200	14500	14500	14700
6	14400	14700	11400	12100	14900	15000	14900	10900	25100	14700	14500	14800
7	14300	14800	11900	9500	14900	15000	14800	11000	25100	14500	12800	14900
8	14500	14900	12400	9900	14800	14900	14900	11000	25400	14700	14400	14800
9	14400	14900	12900	9900	14800	14900	14900	11000	25100	14700	14600	14900
10	14600	14900	12800	10500	14900	14900	14900	9900	25400	14500	14700	14900
11	14600	14600	12700	11000	14800	14900	14800	10700	25100	14400	14600	14900
12	14500	14500	13100	11600	14900	14900	14800	10900	25500	14700	14500	14900
13	14500	14700	13500	12600	14900	14900	14900	11800	25400	14500	14600	14400
14	14700	14700	9800	13800	14900	14900	14800	14700	25000	14400	14700	14200
15	14700	14800	10000	14300	14900	14900	14700	14900	25100	14400	14600	14300
16	14700	14900	9800	14400	14900	14900	14500	14900	25200	14500	14700	14200
17	14700	14800	10100	14400	14800	14900	14700	14900	23300	14400	14700	15000
18	14700	14600	9700	14200	14900	14900	14900	17600	22100	14400	13500	14900
19	14700	14700	10700	14400	14900	14900	15000	20200	19200	14400	13000	14900
20	14800	14700	11800	14600	14900	9000	14900	20300	16000	14600	12800	14900
21	14700	14700	12400	14700	14900	9500	14800	20300	14700	14400	14700	14900
22	14700	14800	13000	14800	14900	9500	14800	20300	14800	14700	14700	14900
23	14700	14800	12900	14800	14900	10100	15000	20300	14800	14700	14400	14900
24	14700	14800	13100	14800	14900	10400	15000	20300	14700	14700	14700	14900
25	14700	14700	13200	14800	14900	10500	15000	20300	14800	14600	14700	14900
26	14700	13100	13500	14800	14900	10900	14900	20000	14800	14600	14700	14900
27	14800	10100	13600	14800	14900	10900	13800	20300	14800	14600	14700	14900
28	14900	10300	13600	14900	14900	11000	14800	20200	14700	14600	14700	14900
29	14800	10200	13600	14800	14900	10800	14800	20300	14500	14600	14800	15000
30	14800	9900	13600	14800	---	10800	14800	20200	14700	14600	14800	15000
31	14800	---	14200	14900	---	11100	---	19800	---	14600	14800	---
TOTAL	453100	422700	370700	405300	431500	407500	437900	490600	623300	451000	447500	444000
MEAN	14620	14090	11960	13070	14880	13150	14600	15830	20780	14550	14440	14800
MAX	14900	14900	14200	14900	14900	15000	15000	20300	25500	14800	14800	15000
MIN	14300	9900	9700	9500	14800	9000	11000	9900	14500	14300	12800	14200
AC-FT	898700	838400	735300	803900	855900	808300	868600	973100	1236000	894600	887600	880700

CAL YR 1975 TOTAL 5741500 MEAN 15730 MAX 35400 MIN 4300 AC-FT 11390000
WTR YR 1976 TOTAL 5385100 MEAN 14710 MAX 25500 MIN 9000 AC-FT 10680000

06132000 MISSOURI RIVER BELOW FORT PECK DAM, MT--Continued
(National Stream Quality Accounting Network)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964, 1975 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to current year.
WATER TEMPERATURES: October 1974 to current year.

REMARKS.--Flow completely regulated by Fort Peck Lake. Also many diversions for irrigation upstream from station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 814 micromhos May 17, 1975; minimum daily, 565 micromhos Dec. 10, 1975.
WATER TEMPERATURES: Maximum daily, 14.5°C on several days during August and September, 1976; minimum daily, 0.5°C Feb. 8, 1975.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 812 micromhos May 30; minimum daily, 565 micromhos Dec. 10
WATER TEMPERATURES: Maximum daily, 14.5°C on several days during August and September, minimum daily, 1.0°C on several days during January.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	FECAL COLIFORM (COL. PER 100 ML)	FECAL STREPTOCOCCI KF AGAR (COL. PER 100 ML)
OCT											
23...	1300	12800	610	8.6	7.0	11.0	3	10.8	106	4	7
NOV											
18...	1300	12700	625	8.6	2.5	8.0	1	11.7	106	<1	2
DEC											
10...	1230	12000	565	8.5	-2.0	4.0	1	11.1	91	2	3
JAN											
22...	1300	14500	635	8.6	4.5	1.5	1	11.8	91	3	2
FEB											
19...	1330	12700	660	8.2	-2.0	2.0	2	13.2	103	<1	<1
MAR											
25...	1230	12400	640	8.6	10.0	5.5	2	12.6	107	2	<1
APR											
09...	1300	13200	620	8.6	13.0	6.5	3	11.9	103	<1	<1
MAY											
18...	1530	14100	645	8.7	21.0	12.5	3	10.3	104	12	52
JUN											
24...	1330	11600	645	8.2	16.0	11.5	10	10.8	107	6	7
JUL											
21...	1300	12100	630	8.4	26.0	14.0	--	9.6	100	10	21
AUG											
17...	1430	12100	650	8.6	24.0	14.5	10	9.0	95	8	19
SEP											
21...	1300	12200	620	8.4	20.5	14.0	4	8.2	85	6	11

DATE	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)
OCT											
23...	220	63	56	19	47	1.4	3.9	173	8	.8	160
NOV											
18...	210	61	54	19	47	1.4	3.9	173	6	.7	160
DEC											
10...	220	58	54	20	48	1.4	4.2	182	6	1.0	140
JAN											
22...	220	65	55	20	47	1.4	3.6	184	2	.8	160
FEB											
19...	220	65	55	20	47	1.4	3.8	188	0	1.9	160
MAR											
25...	230	74	57	21	48	1.4	4.1	173	8	.8	150
APR											
09...	220	61	55	21	45	1.3	3.9	186	6	.8	150
MAY											
18...	220	70	53	21	45	1.3	3.9	182	0	.6	170
JUN											
24...	240	85	58	22	44	1.2	3.8	183	0	1.8	160
JUL											
21...	--	--	--	--	--	--	--	--	--	--	--
AUG											
17...	230	82	61	20	46	1.3	3.7	186	0	.7	160
SEP											
21...	220	77	55	21	46	1.3	4.0	179	0	1.1	160

06132000 MISSOURI RIVER BELOW FORT PECK DAM, MT -- Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT											
23...	9.0	.7	7.5	398	.54	13800	.06	.59	.65	.01	--
NOV											
18...	8.1	.7	7.4	392	.53	13400	.07	.16	.23	.01	--
DEC											
10...	6.9	.6	7.9	404	.55	13100	.12	.29	.41	.00	3.3
JAN											
22...	7.7	.7	7.5	407	.55	15900	.14	.36	.50	.01	--
FEB											
19...	7.3	.7	7.1	391	.53	13400	.08	.38	.46	.00	--
MAR											
25...	7.1	.7	7.7	409	.56	13700	.09	.41	.50	.02	3.1
APR											
09...	7.1	.7	6.9	397	.54	14100	.04	.44	.48	.01	--
MAY											
18...	6.9	.7	7.7	399	.54	15200	.03	.30	.33	.02	--
JUN											
24...	7.9	.7	8.1	410	.56	12800	.13	.28	.41	.03	3.2
JUL											
21...	--	--	--	--	--	--	--	--	--	--	--
AUG											
17...	7.7	.6	8.3	405	.55	13200	.15	.00	.15	.03	--
SEP											
21...	7.4	.6	8.0	401	.55	13200	.17	.22	.39	.02	--

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
DEC												
10...	1230	3	3	<10	1	0	<10	<50	0	10	1	100
MAR												
25...	1230	3	3	<10	1	20	10	<50	0	10	3	310
JUN												
24...	1330	5	3	0	0	20	<10	1	0	0	0	1000
SEP												
21...	1300	5	6	<10	1	0	0	50	0	<10	4	390

DATE	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
DEC											
10...	20	<100	4	10	0	.0	.0	2	1	50	0
MAR											
25...	0	<100	3	10	0	.0	.0	1	1	30	0
JUN											
24...	20	3	0	20	6	<.5	<.5	0	0	10	2
SEP											
21...	0	<100	6	10	0	--	.0	1	1	10	10

06132000 MISSOURI RIVER BELOW FORT PECK DAM, MT -- Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	640	618	605	669	616	621	835	630	776	603	627	641
2	638	629	619	687	629	621	835	738	779	614	627	641
3	640	618	622	687	682	621	629	730	739	611	624	639
4	635	629	622	688	643	621	620	728	---	616	623	635
5	636	614	618	647	649	642	621	732	651	619	627	635
6	638	613	653	639	652	641	619	735	669	636	627	636
7	651	621	621	630	649	638	619	672	621	638	624	662
8	614	619	632	629	628	692	619	642	621	615	618	646
9	614	622	619	627	632	692	615	649	620	615	618	639
10	613	622	626	630	641	696	613	691	630	610	618	637
11	615	620	630	633	639	706	618	689	629	612	622	643
12	620	619	627	635	631	693	618	769	621	612	617	647
13	621	619	612	638	695	695	616	768	647	610	619	677
14	620	619	651	639	632	621	619	768	644	610	627	639
15	631	619	609	620	630	710	618	768	628	612	631	642
16	628	619	608	622	630	710	618	768	624	609	618	652
17	627	622	619	650	632	764	651	639	633	609	618	660
18	611	621	619	644	634	764	622	638	624	616	640	668
19	619	624	619	662	635	660	681	638	638	612	629	635
20	617	631	620	662	646	740	621	646	640	615	622	643
21	615	639	612	659	643	750	615	634	660	619	623	642
22	618	624	624	662	642	638	619	658	733	612	623	647
23	620	624	618	664	648	618	616	658	631	612	620	---
24	618	622	629	681	648	639	649	659	633	612	624	649
25	631	622	---	640	642	809	635	665	633	612	624	639
26	615	621	620	638	641	629	625	732	629	612	622	649
27	615	620	620	632	632	627	632	721	638	609	615	642
28	613	619	626	668	639	652	620	658	638	612	620	647
29	613	624	624	668	644	627	620	658	649	612	621	643
30	617	620	624	668	---	628	742	812	661	621	620	640
31	619	---	620	668	---	635	---	780	---	625	621	---
MONTH	623	622	622	651	642	671	643	699	653	615	623	645

YEAR MAX 835 MIN 603 MEAN 642

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.5	11.5	6.0	2.0	2.5	2.5	5.0	6.0	10.5	13.0	12.5	13.5
2	11.5	11.5	6.0	1.5	2.5	2.0	5.0	6.0	10.5	12.5	12.5	13.5
3	12.0	11.5	6.0	2.0	2.5	2.0	3.5	6.5	11.0	12.0	13.0	13.5
4	12.0	12.0	6.5	1.5	2.5	2.5	4.0	6.5	11.5	12.0	13.0	13.5
5	12.0	12.0	6.0	1.5	2.5	2.5	3.5	7.0	10.0	11.5	13.0	13.5
6	12.0	11.0	5.5	1.0	2.5	3.0	4.5	7.0	11.0	12.0	13.5	13.5
7	12.5	11.0	5.5	1.0	2.5	3.5	4.5	7.0	11.0	12.5	13.5	14.0
8	11.5	10.0	5.0	1.0	3.0	3.0	5.0	7.0	11.0	13.0	13.0	14.0
9	12.5	10.0	5.0	1.0	3.0	3.0	5.0	7.5	11.0	13.0	13.5	14.0
10	12.5	10.0	5.0	1.0	3.0	3.0	5.0	7.5	11.0	12.5	13.0	14.0
11	12.5	10.0	5.0	1.0	3.0	3.5	5.5	7.5	11.0	13.0	13.0	13.0
12	12.0	10.0	5.0	1.0	2.5	3.5	5.5	8.0	10.5	12.5	13.0	13.0
13	12.0	10.0	4.5	1.0	2.5	3.5	5.0	8.5	11.0	12.5	13.0	13.5
14	12.0	10.0	4.5	1.5	2.5	3.5	5.0	8.5	11.0	12.5	13.0	13.5
15	12.5	10.0	3.5	1.5	2.5	3.5	5.0	8.5	12.5	13.0	13.0	13.5
16	12.5	10.0	2.5	1.5	2.5	3.5	5.5	8.5	11.0	13.0	13.0	13.5
17	12.5	10.0	3.0	2.0	2.5	3.5	4.5	8.5	13.0	12.5	13.0	13.5
18	12.5	10.0	3.0	2.0	2.0	3.5	5.0	9.0	10.5	12.0	12.5	13.5
19	12.5	10.0	3.5	1.5	2.0	3.5	5.0	9.0	11.0	12.0	14.0	13.5
20	12.5	10.0	3.5	1.5	2.5	3.5	5.0	9.5	11.0	12.0	13.5	13.5
21	12.0	9.0	3.5	2.0	3.0	4.5	4.5	9.5	11.5	12.5	13.5	13.5
22	12.0	8.5	3.0	2.0	3.5	4.0	5.0	9.5	14.0	12.0	13.5	13.5
23	12.0	8.5	3.0	2.0	3.5	3.5	5.0	9.5	11.5	12.0	13.5	13.5
24	12.0	8.0	3.0	2.0	3.5	3.5	5.5	9.0	12.0	12.5	14.0	14.5
25	11.5	8.0	---	1.5	3.0	4.0	6.0	8.5	12.0	13.0	14.0	14.0
26	11.5	7.0	2.5	2.0	3.0	4.5	6.0	9.5	12.0	12.0	14.5	14.0
27	11.5	7.0	3.0	2.0	3.0	4.5	6.5	9.5	13.0	12.0	14.5	14.0
28	11.5	7.0	3.0	2.0	2.5	4.5	5.5	10.0	13.0	12.0	14.5	14.0
29	11.5	6.5	3.0	2.0	2.5	4.0	6.0	10.5	11.0	12.5	14.5	14.0
30	11.5	6.0	2.5	2.0	---	4.0	6.0	10.5	12.5	12.5	14.5	14.0
31	11.5	---	2.5	2.5	---	4.5	---	11.0	---	12.5	14.5	---
MONTH	12.0	9.5	4.0	1.5	2.5	3.5	5.0	8.5	11.5	12.5	13.5	13.5

YEAR MAX 14.5 MIN 1.0 MEAN 8.0

06132000 MISSOURI RIVER BELOW FORT PECK DAM, MT -- Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .062 MM
OCT						
23...	1300	11.0	12800	25	864	36
NOV						
18...	1300	8.0	12700	14	480	47
DEC						
10...	1230	4.0	12000	31	1000	72
JAN						
22...	1300	1.5	14500	8	313	33
MAR						
25...	1230	5.5	12400	26	870	46
APR						
09...	1300	6.5	13200	94	3350	90
JUN						
24...	1330	11.5	11600	42	1320	25
JUL						
21...	1300	14.0	12100	13	425	57
AUG						
17...	1430	14.5	12100	11	359	73
SEP						
21...	1300	14.0	12200	12	395	47

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON

Date	Length of exposure (days)	Biomass (g/m^2) Dry weight	Ash weight	Chlorophyll a (mg/m^2)	Chlorophyll b (mg/m^2)	Biomass pigment ratio	Sampling method
Jun 24	36	3.08	2.92	.103	.000	1500	Polyethylene strip

PHYTOPLANKTON
OCT. 23, 1975
1300 HOURS
150 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT
	CHRYSOPHYTA			
	.BACILLARIOPHYCEAE	DIATOMS		
	..CENTRALES	CENTRIC		
	...COSCINODISCACEAE			
D	....CYCLOTELLA		37	25
	..PENNALES	PENNATE		
	...ACHNANTHACEAE			
L	....ACHNANTHES			0
L	....COCCONEIS			0
L	....RHOICOSPHENIA			0
	...CYMBELLACEAE			
L	....CYMBELLA			0
	...FRAGILARIACEAE			
L	....ASTERIONELLA			0
	...NAVICULACEAE	NAVICULOID		
D	....NAVICULA		55	37
	...NITZSCHIACEAE			
D	....NITZSCHIA		55	37
		TOTALS	150	99

I.561=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
ORDER 0.811
FAMILY 1.561
GENERA 1.561

06132000 MISSOURI RIVER BELOW FORT PECK DAM, MT -- Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
NOV. 18, 1975
1300 HOURS
220 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		9	4	
		TOTALS	9	4	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		27	12	
	....STEPHANODISCUS		9	4	
	..PENNALES	PENNATE			
	...CYMBELLACEAE				
	....CYMBELLA		18	8	
	....EPITHEMIA		9	4	
	...DIATOMACEAE				
D	....DIATOMA		73	33	
	...FRAGILARIACEAE				
L	....ASTERIONELLA			0	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		27	12	
	...NITZSCHIACEAE				
D	....NITZSCHIA		45	21	
		TOTALS	210	94	2.475=DIVERSITY

PHYL/DIV	0.250
CLASS	0.250
ORDER	0.889
FAMILY	2.372
GENERA	2.622

DEC. 10, 1975
1230 HOURS
130 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
D	....OOCYSTIS		64	50	
		TOTALS	64	50	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...DIATOMACEAE				
	....DIATOMA		8	6	
	...FRAGILARIACEAE				
L	....ASTERIONELLA			0	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		8	6	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		16	12	
	...NITZSCHIACEAE				
D	....NITZSCHIA		32	25	
		TOTALS	64	49	1.750=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..CHROOCOCCALES	COCCOID			
	...CHROOCOCCACEAE				
L	....ANACYSTIS			0	

PHYL/DIV	1.000
CLASS	1.000
ORDER	1.000
FAMILY	1.875
GENERA	1.875

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

JAN. 22, 1976
1300 HOURS
130 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...CHARACIACEAE				
	....SCHROEDERIA		4	3	
		TOTALS	4	3	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		8	6	
L	....STEPHANODISCUS			0	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		4	3	
L	....COCCONEIS			0	
	....RHOICOSPHENIA		4	3	
	...DIATOMACEAE				
D	....DIATOMA		21	16	
	...FRAGILARIACEAE				
D	....ASTERIONELLA		50	39	
	....SYNEDRA		8	6	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		8	6	
	...NITZSCHIACEAE				
	....NITZSCHIA		17	13	
		TOTALS	120	92	2.491=DIVERSITY
	PYRRHOPHYTA	FIRE ALGAE			
	.DINOPHYCEAE	DINOFLAGELLATES			
	..PERIDINIALES				
	...GLENODINIACEAE				
	....GLENODINIUM		4	3	
		TOTALS	4	3	0.000=DIVERSITY

PHYL/DIV 0.410
CLASS 0.410
ORDER 0.748
FAMILY 2.409
GENERA 2.740

FEB. 19, 1976
1330 HOURS
630 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		55	9	
		TOTALS	55	9	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		55	9	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
L	....COCCONEIS			0	
	...CYMBELLACEAE				
	....CYMBELLA		9	1	
	...DIATOMACEAE				
	....DIATOMA		46	7	
	...FRAGILARIACEAE				
D	....ASTERIONELLA		290	46	
L	....FRAGILARIA			0	
	....SYNEDRA		28	4	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		9	1	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		46	7	
	...NITZSCHIACEAE				
	....NITZSCHIA		64	10	
		TOTALS	550	85	2.188=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..CHROOCOCCALES	COCCOID			
	...CHROOCOCCACEAE				
	....ANACYSTIS		28	4	
		TOTALS	28	4	0.000=DIVERSITY

PHYL/DIV 0.678
CLASS 0.678
ORDER 1.086
FAMILY 2.367
GENERA 2.581

06132000 MISSOURI RIVER BELOW FORT PECK DAM, MT -- Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAR. 25, 1976
1230 HOURS
820 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		420	51	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
L	....RHOICOSPHENIA			0	
	...CYMBELLACEAE				
L	....CYMBELLA			0	
	...DIATOMACEAE				
	....DIATOMA		72	9	
	...FRAGILARIACEAE				
D	....ASTERIONELLA		240	30	
L	....FRAGILARIA			0	
L	....SYNEDRA			0	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		14	2	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		29	4	
	...NITZSCHIACEAE				
	....NITZSCHIA		43	5	
		TOTALS	820	101	1.820=DIVERSITY

ORDER 1.000
FAMILY 1.820
GENERA 1.820

APR. 9, 1976
1300 HOURS
4,300 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		3,700	86	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....RHOICOSPHENIA		58	1	
	...DIATOMACEAE				
	....DIATOMA		350	8	
	...FRAGILARIACEAE				
L	....ASTERIONELLA			0	
	....SYNEDRA		120	3	
	...NAVICULACEAE	NAVICULOID			
L	....NAVICULA			0	
	...NITZSCHIACEAE				
	....NITZSCHIA		58	1	
		TOTALS	4,300	99	0.784=DIVERSITY

ORDER 0.571
FAMILY 0.784
GENERA 0.784

MAY 18, 1976
1530 HOURS
930 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...DIATOMACEAE				
D	....DIATOMA		270	29	
	...FRAGILARIACEAE				
	....ASTERIONELLA		10	1	
D	....FRAGILARIA		140	15	
	....SYNEDRA		120	13	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		10	1	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		220	23	
	...NITZSCHIACEAE				
D	....NITZSCHIA		170	18	
		TOTALS	930	100	2.381=DIVERSITY

FAMILY 2.040
GENERA 2.381

06132000 MISSOURI RIVER BELOW FORT PECK DAM, MT -- Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
JUNE 24, 1976
1330 HOURS
600 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		6	1	
		TOTALS	6	1	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		13	2	
L	....MELOSIRA			0	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		25	4	
	....RHOICOSPHENIA		51	9	
	...CYMBELLACEAE				
	....CYMBELLA		13	2	
	...DIATOMACEAE				
	....DIATOMA		57	10	
	...FRAGILARIACEAE				
	....ASTERIONELLA		13	2	
O	....FRAGILARIA		140	23	
	....SYNEDRA		13	2	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		13	2	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		140	23	
	...NITZSCHIACEAE				
D	....NITZSCHIA		110	19	
		TOTALS	590	98	2.864=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
L	....OSCILLATORIA			0	

PHYL/DIV 0.085
CLASS 0.085
ORDER 0.233
FAMILY 2.587
GENERA 2.918

JULY 21, 1976
1300 HOURS
650 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...COELASTRACEAE				
O	....COELASTRUM		130	19	
	...OOCYSTACEAE				
	....ANKISTRODESMUS		8	1	
		TOTALS	130	20	0.323=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		24	4	
	....MELOSIRA		24	4	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		8	1	
	....COCCONEIS		16	2	
	....RHOICOSPHENIA		16	2	
	...CYMBELLACEAE				
	....CYMBELLA		8	1	
	...DIATOMACEAE				
	....DIATOMA		31	5	
	...FRAGILARIACEAE				
	....ASTERIONELLA		16	2	
	....FRAGILARIA		16	2	
	....SYNEDRA		8	1	

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

JULY 21, 1976--CONTINUED

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	...GOMPHONEMATACEAE		8	1	
	....GOMPHONEMA				
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		150	23	
	...NITZSCHIACEAE				
D	....NITZSCHIA		190	29	
	...SURIRELLACEAE				
	....SURIRELLA		8	1	
		TOTALS	520	78	2.768=DIVERSITY

PHYL/DIV 0.731
CLASS 0.731
ORDER 1.081
FAMILY 2.743
GENERA 2.998

AUG. 17, 1976
1430 HOURS
2,300 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
L	....MELOSIRA			0	
	..PENNALES	PENNATE			
	...ACMNANTHACEAE				
	....COCCONEIS		20	1	
	....RHOICOSPHENIA		79	3	
	...CYMBELLACEAE				
	....CYMBELLA		20	1	
	...DIATOMACEAE				
	....DIATOMA		40	2	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		140	6	
	....NEIDIUM		20	1	
	...NITZSCHIACEAE				
	....NITZSCHIA		99	4	
	...SURIRELLACEAE				
	....CYMATOPLEURA		20	1	
		TOTALS	440	19	2.584=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
D	....OSCILLATORIA		1,800	81	
		TOTALS	1,800	81	0.000=DIVERSITY

PHYL/DIV 0.704
CLASS 0.704
ORDER 0.704
FAMILY 1.129
GENERA 1.199

SEP. 21, 1976
1300 HOURS
420 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		13	3	
		TOTALS	13	3	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....MELOSIRA		64	15	

06132000 MISSOURI RIVER BELOW FORT PECK DAM, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

SEP. 21, 1976--CONTINUED

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		13	3	
	....RHOICOSPHENIA		26	6	
	...CYMBELLACEAE				
	....CYMBELLA		13	3	
	...DIATOMACEAE				
	....DIATOMA		38	9	
	...FRAGILARIACEAE				
	....FRAGILARIA		13	3	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		170	39	
	...NITZSCHIACEAE				
	....NITZSCHIA		51	12	
	...SURIRELLACEAE				
L	....CYMATOPLEURA			0	
	....SURIRELLA		13	3	
		TOTALS	400	93	2.552=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
	....TRACHELOMONAS		13	3	
		TOTALS	13	3	0.000=DIVERSITY

PHYL/DIV 0.390
CLASS 0.390
ORDER 0.989
FAMILY 2.704
GENERA 2.788

06132200 SOUTH FORK MILK RIVER NEAR BABB, MT

(International gaging station)

LOCATION.--Lat 48°45'14", long 113°10'00", in NE¼NW¼NW¼ sec.34, T.35 N., R.12 W., Glacier County, Hydrologic Unit 10050001, on right bank 300 ft (91 m) upstream from bridge on FAS 464 ("Duck Lake Road"), 14.4 mi (23.2 km) southeast of Babb, and 15.2 mi (24.5 km) northwest of Browning.

DRAINAGE AREA.--68.6 mi^2 (178 km^2).

PERIOD OF RECORD.--May 1961 to current season (seasonal records only).

GAGE.--Water-stage recorder. Datum of gage is 4,731.6 ft (1,442.19 m) above mean sea level.

REMARKS.--Records good except those for winter months, which are poor. Several small diversions for irrigation above station.

COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft^3/s (340 m^3/s) June 8, 1964, gage height, 6.61 ft (2.015 m), from rating curve extended above 400 ft^3/s (11.3 m^3/s) on basis of slope-area measurement of peak flow at site 3 mi (5 km) downstream; maximum gage height, 6.78 ft (2.067 m) June 20, 1975 (backwater from bridge); no flow Aug. 23, 1973.

EXTREMES FOR CURRENT SEASON.--Maximum discharge, 264 ft^3/s (7.48 m^3/s) Apr. 8, gage height, 4.14 ft (1.262 m), backwater from ice; maximum gage height, 4.81 ft (1.466 m) Mar. 21, (backwater from ice jam); minimum discharge, 5.5 ft^3/s (0.16 m^3/s) Sept. 6, gage height, 2.54 ft (0.774 m).

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		---	15	57	145	66	34	23	8.3	6.9	9.7	
2		---	12	64	120	61	32	20	7.2	6.9	13	
3		---	12	85	103	59	32	18	6.3	6.9	13	
4		---	13	74	101	60	31	21	6.0	7.6	---	
5		---	14	124	151	56	31	45	6.0	7.9	---	
6		---	15	161	171	67	31	34	5.8	8.3	---	
7		---	16	161	119	138	30	32	6.3	8.6	---	
8		---	17	198	108	91	33	28	8.3	8.3	---	
9		---	18	203	106	70	32	22	8.0	7.9	---	
10		---	18	175	105	59	29	21	7.9	7.2	---	
11		---	17	181	103	59	27	21	6.9	6.9	---	
12		---	15	172	97	52	33	18	6.9	6.9	---	
13		---	15	158	87	54	40	15	6.9	7.2	---	
14		---	16	121	101	66	32	13	7.6	6.5	---	
15		---	17	94	121	57	29	21	7.2	6.3	---	
16		---	19	78	93	53	27	31	6.5	6.9	---	
17		---	33	68	83	70	24	27	6.5	7.6	---	
18		---	58	65	78	59	22	18	6.5	9.0	---	
19		---	77	60	73	49	23	15	6.9	11	---	
20		---	54	59	72	44	27	16	6.9	11	---	
21		---	43	58	77	44	26	24	7.2	10	---	
22		---	37	57	71	50	22	18	6.5	10	---	
23		---	45	60	75	47	19	15	6.5	9.7	---	
24		---	43	56	77	45	18	15	7.2	9.7	---	
25		---	34	60	71	46	18	14	11	10	---	
26		---	32	59	69	45	17	12	14	11	---	
27		18	31	53	65	41	15	11	11	10	---	
28		16	28	59	63	38	13	10	9.7	9.3	---	
29		15	27	63	63	36	14	10	8.6	9.3	---	
30		---	28	100	63	35	26	9.7	7.2	8.6	---	
31		---	47	---	64	---	32	9.0	---	9.0	---	
TOTAL	---	---	866	2983	2895	1717	819	606.7	228.4	262.4	---	
MEAN	---	---	27.9	99.4	93.4	57.2	26.4	19.6	7.61	8.46	---	
MAX	---	---	77	203	171	138	40	45	14	11	---	
MIN	---	---	12	53	63	35	13	9.0	5.8	6.3	---	
AC-FT	---	---	1720	5920	5740	3410	1620	1200	453	520	---	

THE SEASON MARCH TO OCTOBER AC-FT 20,580

06133000 MILK RIVER AT WESTERN CROSSING OF INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 49°00'27", long 112°32'42", in NE¼ sec.1, T.1, R.20 W., fourth meridian, in Alberta, Hydrologic Unit 10050001, on left bank 0.8 mi (1.3 km) north of international boundary, 22 mi (35 km) upstream from North Milk River, 23 mi (37 km) southwest of Milk River, Alberta, and at mile 680.4 (1,094.8 km).

DRAINAGE AREA.--397 mi^2 (1,028 km^2).

PERIOD OF RECORD.--March 1931 to current season (seasonal records only). Prior to October 1961, published as South Fork Milk River near international boundary.

REVISED RECORDS.--WSP 1389: 1934(M), 1935, 1936(M), 1937, 1942(M), 1947-48(M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 3,820 ft (1,160 m), from topographic map. Prior to Aug. 9, 1948, and Aug. 9, 1948, to Oct. 31, 1958, water-stage recorders at sites 0.4 mi (0.6 km) and 0.5 mi (0.8 km) downstream, respectively, at different datums.

REMARKS.--Records good except those for winter period, which are poor. Several small diversions for irrigation above station.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,930 ft^3/s (225 m^3/s) June 9, 1964, gage height, 9.77 ft (2.978 m); maximum gage height, 12.55 ft (3.825 m) Mar. 18, 1976 (backwater from ice jam); no flow at times.

EXTREMES FOR CURRENT SEASON.--Peak discharges above base of 430 ft^3/s (12.2 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 18	Unknown	*1,000	28.3	*a12.55	3.825	May 6	1525	640	18.1	4.67	1.423

a Backwater from ice

Minimum discharge, 3.3 ft^3/s (0.093 m^3/s) Sept. 6, 7, 9, gage height, 2.19 ft (0.668 m).

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		---	32	178	315	96	61	18	8.3	12	17	
2		---	30	243	380	95	50	33	6.9	11	17	
3		---	28	243	369	95	45	31	6.4	9.4	16	
4		---	28	202	320	92	41	28	5.7	8.5	---	
5		---	29	234	300	89	38	39	4.5	8.2	---	
6		---	29	298	536	95	38	44	3.8	8.7	---	
7		---	30	372	421	115	39	67	4.6	9.4	---	
8		---	31	384	344	189	38	56	4.8	11	---	
9		---	35	383	290	175	37	52	4.0	11	---	
10		---	44	379	261	129	35	58	4.8	12	---	
11		---	38	373	237	113	35	46	5.4	11	---	
12		---	33	375	226	114	40	38	7.5	11	---	
13		---	40	367	213	102	40	35	7.0	11	---	
14		---	50	351	194	106	39	30	6.1	9.6	---	
15		---	60	309	200	176	43	26	5.5	9.4	---	
16		---	80	274	228	139	37	26	5.1	8.3	---	
17		---	149	243	204	119	31	26	5.0	9.7	---	
18		---	545	220	180	141	28	42	4.8	10	---	
19		---	420	208	166	123	25	38	4.2	11	---	
20		---	340	202	155	93	24	29	3.7	13	---	
21		---	305	198	150	78	31	22	3.5	16	---	
22		---	210	198	148	74	29	19	3.5	20	---	
23		---	261	203	146	75	30	18	3.7	19	---	
24		44	156	204	137	83	25	22	4.1	26	---	
25		42	140	195	133	82	21	19	4.4	23	---	
26		40	145	208	123	78	19	16	4.7	20	---	
27		37	112	216	113	74	16	15	4.7	21	---	
28		36	116	198	106	68	14	14	5.6	20	---	
29		34	107	219	98	59	13	12	14	19	---	
30		---	112	234	91	53	15	10	14	18	---	
31		---	130	---	94	---	15	9.2	---	18	---	
TOTAL	---	---	3865	7911	6878	3120	992	938.2	170.3	425.2	---	
MEAN	---	---	125	264	222	104	32.0	30.3	5.68	13.7	---	
MAX	---	---	545	384	536	189	61	67	14	26	---	
MIN	---	---	28	178	91	53	13	9.2	3.5	8.2	---	
AC-FT	---	---	7670	15690	13640	6190	1970	1860	338	843	---	

THE SEASON MARCH TO OCTOBER AC-FT 48,200

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

06133500 NORTH FORK MILK RIVER ABOVE ST. MARY CANAL, NEAR BROWNING, MT

(International gaging station)

LOCATION.--Lat 48°58'15", long 113°03'19", in NE¼NW¼NE¼ sec.16, T.37 N., R.11 W., Glacier County, Hydrologic Unit 10050001, on left bank 1.7 mi (2.7 km) upstream from outlet of canal, 1.9 mi (3.1 km) south of International boundary, and 29 mi (47 km) north of Browning.

DRAINAGE AREA.--61.8 mi^2 (160 km^2).

PERIOD OF RECORD.--May 1911 to July 1912 and June to July 1918 (published as "near Browning"), May 1919 to current season (seasonal records only). Monthly discharge only for some periods published in WSP 1309. Records usually obtained at this station only when St. Mary Canal is in operation.

GAGE.--Water-stage recorder. Concrete control since 1936. Altitude of gage is 4,220 ft (1,290 m), from topographic map. Prior to June 20, 1921, nonrecording gages at several sites within 1 mi (2 km) of present site at different datums.

REMARKS.--Records good. Several small diversions for irrigation above station.

COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,090 ft^3/s (87.5 m^3/s) May 8, 1967, gage height, 7.95 ft (2.423 m), from rating curve extended above 130 ft^3/s (3.68 m^3/s) on basis of slope-area measurements at gage heights 7.55 ft (2.301 m) and 7.95 ft (2.423 m); no flow Oct. 29, 1942.

EXTREMES FOR CURRENT SEASON.--Maximum discharge, 109 ft^3/s (3.09 m^3/s) May 5, gage height, 2.26 ft (0.689 m); minimum daily, 14 ft^3/s (0.40 m^3/s) Sept. 2, 3, 5, 6, 11, 13-18, 22-24, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			---	42	62	23	21	19	15	15	18	
2			---	30	50	22	20	18	14	15	---	
3			---	32	44	23	20	19	14	15	---	
4			---	41	41	24	20	18	15	15	---	
5			---	48	75	22	20	23	14	16	---	
6			---	49	72	30	20	21	14	17	---	
7			---	53	47	36	20	21	16	16	---	
8			---	54	41	27	21	21	19	16	---	
9			---	49	39	24	20	20	16	15	---	
10			---	46	36	26	20	24	15	15	---	
11			---	48	35	30	19	23	14	15	---	
12			---	43	32	23	23	20	15	15	---	
13			---	40	31	37	26	19	14	16	---	
14			---	36	41	58	21	18	14	15	---	
15			---	33	41	29	20	20	14	16	---	
16			---	32	31	33	19	33	14	16	---	
17			---	31	29	45	19	20	14	17	---	
18			---	31	28	28	18	19	14	17	---	
19			---	30	27	25	20	18	15	18	---	
20			---	29	27	23	21	17	15	18	---	
21			---	29	27	23	26	17	15	18	---	
22			---	29	26	25	20	16	14	18	---	
23			---	31	27	26	18	16	14	18	---	
24			---	29	27	27	18	17	14	18	---	
25			---	32	25	25	19	16	16	18	---	
26			---	30	25	24	18	16	16	18	---	
27			---	33	24	22	17	16	15	18	---	
28			---	36	23	21	17	15	15	17	---	
29			---	37	23	21	17	15	15	17	---	
30			---	55	23	21	21	15	14	18	---	
31			44	---	25	---	22	15	---	18	---	
TOTAL			---	1138	1104	823	621	585	443	514	---	
MEAN			---	37.9	35.6	27.4	20.0	18.9	14.8	16.6	---	
MAX			---	55	75	58	26	33	19	18	---	
MIN			---	29	23	21	17	15	14	15	---	
AC-FT			---	2260	2190	1630	1230	1160	879	1020	---	

THE SEASON APRIL TO OCTOBER AC-FT 10,370

06134000 NORTH MILK RIVER NEAR INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 49°01'19", long 112°58'16", in SW¼NE¼ sec.11, T.1, R.23 W., fourth meridian, in Alberta, Hydrologic Unit 10050001, on right bank 0.4 mi (0.6 km) upstream from highway bridge, 1.6 mi (2.6 km) north of international boundary, 2.8 mi (4.5 km) east of Whiskey Gap, Alberta, and 11 mi (18 km) southeast of Kimball, Alberta.

DRAINAGE AREA.--91.8 mi^2 (238 km^2). Area at site used Apr. 12, 1930 to Aug. 15, 1962, 97.4 mi^2 (252 km^2).

PERIOD OF RECORD.--July 1909 to October 1912 (seasonal records only), January 1913 to October 1922, March 1923 to current season (seasonal records only). Records for November and December 1912, published in WSP 1309, have been found to be unreliable and should not be used. Published as "near Kimball, Alberta" 1913-16. Prior to February 1962, published as North Fork Milk River near international boundary.

REVISED RECORDS.--WSP 1309: 1909-13, 1915(M), 1920(M), 1937(M). WSP 1559: 1948(M). WSP 1729: 1944(M), drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 4,112.16 ft (1,253.386 m) above mean sea level (Geodetic Surveys of Canada datum). Prior to May 1913, nonrecording gage at site 2 mi (3 km) downstream at different datum. May 1, 1913, to Apr. 11, 1930, water-stage recorder 700 ft (213 m) downstream at different datum. Apr. 12, 1930, to Aug. 15, 1962, water-stage recorder 1,500 ft (457 m) downstream at different datum.

REMARKS.--Records good. Several small diversions for irrigation above station. For recorded diversions from St. Mary River into North Fork Milk River, see p. 33 .

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,950 ft^3/s (83.5 m^3/s) June 17, 1948, gage height, 6.47 ft (1.972 m), site and datum then in use, from rating curve extended above 1,500 ft^3/s (42.5 m^3/s); no flow Mar. 1, 2, 1940.

EXTREMES FOR CURRENT SEASON.--Maximum discharge, 889 ft^3/s (25.2 m^3/s) June 14, gage height, 4.48 ft (1.366 m); minimum, 11 ft^3/s (0.31 m^3/s) Oct. 24, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		---	25	59	299	739	723	734	673	626	18	
2		---	25	42	272	727	725	734	665	588	18	
3		---	25	46	262	729	731	730	661	394	21	
4		---	25	54	253	739	732	729	665	267	---	
5		---	25	60	363	731	733	756	663	198	---	
6		---	26	62	523	742	735	743	661	117	---	
7		---	27	62	566	754	741	737	667	70	---	
8		---	28	64	628	736	744	733	668	41	---	
9		---	30	62	645	735	736	727	661	30	---	
10		---	32	60	646	736	728	740	661	28	---	
11		---	31	63	644	750	719	734	661	25	---	
12		---	29	59	620	743	733	729	667	19	---	
13		---	28	53	622	782	722	722	662	19	---	
14		---	30	50	634	831	615	724	662	24	---	
15		---	39	46	682	763	623	736	651	20	---	
16		---	55	44	673	763	650	751	644	19	---	
17		---	151	44	670	762	703	727	641	19	---	
18		---	198	44	667	749	713	717	637	19	---	
19		---	170	41	685	738	713	720	638	19	---	
20		---	80	39	715	733	716	723	638	20	---	
21		---	69	73	723	741	718	713	639	20	---	
22		---	74	210	735	748	702	720	639	19	---	
23		---	72	234	737	753	712	722	637	18	---	
24		28	71	231	741	755	712	714	636	18	---	
25		28	62	232	745	744	712	688	643	20	---	
26		27	57	244	738	739	710	682	640	19	---	
27		27	59	247	741	727	717	673	635	18	---	
28		26	52	249	757	717	728	678	634	18	---	
29		26	47	251	742	710	732	679	633	18	---	
30		---	53	283	737	714	741	676	626	18	---	
31		---	63	---	744	---	740	675	---	18	---	
TOTAL	---	---	1758	3308	19209	22350	22159	22266	19508	2766	---	
MEAN	---	---	56.7	110	620	745	715	718	650	89.2	---	
MAX	---	---	198	283	757	831	744	756	673	626	---	
MIN	---	---	25	39	253	710	615	673	626	18	---	
AC-FT	---	---	3490	6560	38100	44330	43950	44160	38690	5490	---	

THE SEASON MARCH TO OCTOBER AC-FT 224,800

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

06134500 MILK RIVER AT MILK RIVER, ALBERTA

(International gaging station)

LOCATION.--Lat 49°08'45", long 112°04'44", in SE¼ sec.28, T.2, R.16 W., fourth meridian, in Alberta, Hydrologic Unit 10050002, on left bank 700 ft (213 m) downstream from highway bridge at Milk River, Alberta, and 22 mi (35 km) downstream from North Milk River.

DRAINAGE AREA.--1,036 mi^2 (2,683 km^2).

PERIOD OF RECORD.--June 1909 to October 1910 (no winter records), April 1911 to current year. Monthly discharge only for June 1909, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1912. WSP 1559: 1916, 1927(M), 1947(M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,402.78 ft (1,037.167 m) above mean sea level (Geodetic Surveys of Canada datum). Prior to June 17, 1919, nonrecording gages, and June 17, 1919, to Nov. 2, 1921, water-stage recorder all at several sites 1,000 ft (305 m) upstream at datum 0.61 ft (0.186 m) higher. Nov. 3, 1921, to Aug. 28, 1947, water-stage recorder at site 60 ft (18 m) upstream at present datum.

REMARKS.--Records poor. No gage-height record Dec. 10 to Mar. 6, Apr. 6-11, 17-29, June 17 to July 12. Since 1917, flow increased during irrigation season by water from St. Mary Canal (see p.33). Several small diversions for irrigation above station.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

AVERAGE DISCHARGE.--60 years (1916-76), 329 ft^3/s (9.317 m^3/s), 238,400 acre-ft/yr (294 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,170 ft^3/s (260 m^3/s) June 21, 1975, gage height, 10.58 ft (3.225 m); maximum gage height, 11.41 ft (3.478 m) May 22, 1927; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 1,400 ft^3/s (39.6 m^3/s) Mar. 19; maximum gage height, 11.03 ft (3.362 m), from highwater mark, Jan. 19 (backwater from ice on cofferdam); minimum discharge, 22 ft^3/s (0.62 m^3/s) Nov. 10, gage height, 1.21 ft (0.369 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	130	121	61	76	210	70	392	598	868	880	787	719
2	120	120	70	68	213	65	422	709	860	860	778	712
3	113	111	76	61	190	57	416	654	858	840	795	706
4	105	104	72	57	150	56	383	593	858	830	795	702
5	99	102	68	53	110	58	373	575	861	835	837	702
6	98	104	76	52	100	62	420	814	876	850	885	706
7	104	96	81	52	110	65	480	1100	922	860	852	713
8	133	94	87	53	130	70	530	955	945	850	849	723
9	162	66	90	55	150	78	555	935	980	835	837	719
10	190	53	81	58	145	87	565	925	933	830	867	713
11	187	60	70	61	135	98	555	924	917	835	864	713
12	206	65	66	65	125	98	536	909	911	840	826	715
13	231	74	65	66	115	92	506	875	906	824	812	718
14	213	79	66	70	110	129	473	863	971	785	805	718
15	190	79	70	76	100	124	446	881	1000	683	807	718
16	163	76	78	83	98	110	401	938	992	684	835	707
17	146	70	83	96	96	362	371	919	950	709	822	702
18	133	65	90	160	94	733	336	882	940	762	788	697
19	124	61	96	535	92	1210	302	854	940	779	797	689
20	118	60	98	349	91	741	273	857	930	783	790	691
21	113	60	103	170	92	578	255	872	895	808	785	690
22	119	61	101	151	94	421	259	886	880	789	774	690
23	127	63	101	135	96	436	279	905	895	769	777	689
24	138	61	98	121	94	503	294	906	905	780	778	694
25	110	60	98	105	91	442	367	886	900	775	769	694
26	96	58	96	101	86	403	462	882	890	767	736	701
27	96	57	94	105	82	346	481	868	875	754	722	704
28	116	57	92	138	78	274	475	868	865	761	716	699
29	120	55	90	163	75	274	466	867	860	770	721	707
30	117	55	87	190	---	293	516	858	875	795	724	710
31	113	---	83	205	---	324	---	870	---	798	722	---
TOTAL	4230	2247	2587	3730	3352	8659	12589	26428	27258	24720	24652	21161
MEAN	136	74.9	83.5	120	116	279	420	853	909	797	795	705
MAX	231	121	103	535	213	1210	565	1100	1000	880	885	723
MIN	96	53	61	52	75	56	255	575	858	683	716	689
AC-FT	8390	4460	5130	7400	6650	17180	24970	52420	54070	49030	48900	41970

CAL YR 1975 TOTAL 132995.0 MEAN 364 MAX 7310 MIN 2.6 AC-FT 263800
WTR YR 1976 TOTAL 161613.0 MEAN 442 MAX 1210 MIN 52 AC-FT 320600

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

06135000 MILK RIVER AT EASTERN CROSSING OF INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 48°59'05", long 110°28'15", in NE¼NW¼ sec.7, T.37 N., R.10 E., Hill County, Hydrologic Unit 10050002, on right bank 1.1 mi (1.8 km) south of international boundary, 6.5 mi (10.5 km) upstream from Lost River, 12.5 mi (20.1 km) northwest of Simpson, 29.5 mi (47.5 km) north of Rudyard, and at mile 466.0 (749.8 km).

DRAINAGE AREA.--2,628 mi² (6,807 km²).

PERIOD OF RECORD.--August 1909 to current year (few winter records). Monthly discharge only for April 1912, published in WSP 1309.

REVISED RECORDS.--WSP 1086: 1927, 1935. WSP 1559: 1920(M), 1922(M), 1926, 1928(M), 1929, 1930(M), 1932(M). WSP 1729: 1921-13, 1921-22, 1929(M), drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 2,660 ft (811 m), from international boundary map. Prior to Oct. 1, 1970, water-stage recorder or nonrecording gages at several sites within 10.5 mi (16.9 km) upstream at different datums.

REMARKS.--Records fair. Since 1917 flow increased during irrigation season by water from St. Mary Canal (see p.33). Small diversions for irrigation above station.

COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,700 ft³/s (303 m³/s) Apr. 9, 1965, gage height, 9.53 ft (2.905 m), site and datum then in use, but may have been higher Mar. 28, 1952; maximum gage height, 13.65 ft (4.161 m), site and datum then in use Mar. 28, 1952 (backwater from ice); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,090 ft³/s (59.2 m³/s) Mar. 21, gage height, 11.08 ft (3.377 m), backwater from ice jam; minimum daily, 67 ft³/s (1.90 m³/s) Mar. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	301					90	349	433	838	808	779	636
2	266					85	332	497	853	835	784	620
3	220					80	352	540	855	895	781	606
4	193					77	385	726	891	941	759	590
5	176					77	404	770	862	921	762	590
6	164					72	404	669	810	858	783	587
7	161					67	327	574	958	844	878	611
8	158					72	316	697	808	861	923	643
9	155					81	356	1110	790	861	876	617
10	155					92	473	953	844	893	894	614
11	154					87	535	962	909	898	848	606
12	168					80	585	956	868	848	861	611
13	201					82	554	887	828	865	926	606
14	285					88	474	931	841	779	877	599
15	247					94	479	883	789	753	794	596
16	248					104	454	832	885	804	779	592
17	229					129	435	831	989	704	788	586
18	208					503	410	915	942	700	788	600
19	184					919	362	847	909	676	749	568
20	166					1170	299	821	905	756	676	566
21	156					1630	255	803	962	806	640	560
22	150					1150	228	788	994	788	624	567
23	150					1090	216	810	961	782	641	587
24	143					1040	207	811	891	735	692	608
25	140					819	204	864	859	721	752	614
26	141					697	390	851	924	693	736	614
27	147					565	496	788	848	758	727	614
28	149					480	466	801	800	730	654	623
29	143					441	468	893	803	711	623	629
30	140					424	475	897	791	734	626	605
31	136					388	---	840	---	773	640	---
TOTAL	5634					12773	11690	24980	26207	24731	23660	18065
MEAN	182					412	390	806	874	798	763	602
MAX	301					1630	585	1110	994	941	926	643
MIN	136					67	204	433	789	676	623	560
AC-FT	11180					25340	23190	49550	51980	49050	46930	35830

Wild Horse Lake closed basin

06135500 SAGE CREEK AT Q RANCH, NEAR WILD HORSE, ALBERTA

(International gaging station)

LOCATION.--Lat 49°06'29", long 110°13'23", in NW¼ sec.9, T.2, R.2 W., fourth meridian, in Alberta, Hydrologic Unit 10050003, on right bank 3.5 mi (5.6 km) north of Q Ranch buildings, 7.5 mi (12.1 km) north of Wild Horse Port of Entry, and 12.5 mi (20.1 km) north of Simpson, Mt.

DRAINAGE AREA.--175 mi^2 (453 km^2).

PERIOD OF RECORD.--March 1935 to current season (seasonal records only). March 1935 to October 1950 monthly discharge only, published in WSP 1309. March to October 1951 monthly discharge only, published in WSP 1729.

GAGE.--Water-stage recorder. Altitude of gage is 2,900 ft (884 m), from topographic map. Prior to Sept. 24, 1935, nonrecording gage at site 2 mi (3 km) downstream at different datum. Sept. 24, 1935, to Oct. 31, 1951, water-stage recorder at site 100 ft (30 m) upstream at datum 0.15 ft (0.046 m) higher.

REMARKS.--Records good.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,500 ft^3/s (99.1 m^3/s) Apr. 11, 1937, gage height, 15.87 ft (4.837 m), site and datum then in use, caused by failure of Elbow Coulee dam; no flow most of each season.

EXTREMES FOR CURRENT SEASON.--Maximum discharge, 769 ft^3/s (21.8 m^3/s) Mar. 19, gage height, 12.26 ft (3.737 m), backwater from ice; no flow most of season.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			0	60	.10	0	3.3				0	
2			0	58	.09	0	1.5				0	
3			0	20	.09	0	.76				---	
4			0	11	.09	0	.54				---	
5			0	6.4	.10	0	.36				---	
6			0	10	.10	0	.22				---	
7			0	12	.10	0	.15				---	
8			0	11	.09	0	.08				---	
9			0	8.7	.06	7.2	0				---	
10			0	11	.05	11	0				---	
11			0	9.3	.07	3.8	0				---	
12			0	4.5	.06	1.3	0				---	
13			0	2.3	.05	.54	0				---	
14			0	1.4	.10	.29	0				---	
15			0	.90	.07	.15	0				---	
16			0	.61	.04	.08	0				---	
17			2.4	.50	.03	0	0				---	
18			430	.40	.02	0	0				---	
19			641	.30	.01	0	0				---	
20			260	.23	0	0	0				---	
21			75	.20	0	0	0				---	
22			70	.18	0	.01	0				---	
23			205	.18	0	.12	0				---	
24			201	.17	0	46	0				---	
25			90	.17	0	58	0				---	
26			84	.17	0	28	0				---	
27			96	.14	0	77	0				---	
28			82	.12	0	39	0				---	
29			57	.12	0	17	0				---	
30			44	.11	0	7.5	0				---	
31			40	---	0	---	0		---		---	
TOTAL			2377.4	230.10	1.32	296.99	6.91	0	0	0	---	
MEAN			76.7	7.67	.043	9.90	.22	0	0	0	---	
MAX			641	60	.10	77	3.3	0	0	0	---	
MIN			0	.11	0	0	0	0	0	0	---	
AC-FT			4720	456	2.6	589	14	0	0	0	---	

THE SEASON MARCH TO OCTOBER AC-FT 5,780

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

Wild Horse Lake closed basin

06136000 SAGE CREEK AT INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 49°00'14", long 110°11'22", in SE¼ sec.3, T.1, R.2 W., fourth meridian, in Alberta, Hydrologic Unit 10050003, on right bank 0.3 mi (0.5 km) north of international boundary, 1.1 mi (1.8 km) east of Wild Horse Port of Entry, and 5.2 mi (8.4 km) north of Simpson, Mt.

DRAINAGE AREA.--220 mi^2 (570 km^2).

PERIOD OF RECORD.--March 1946 to current season (seasonal records only). Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder and concrete low-water control. Altitude of gage is 2,800 ft (853 m), from international boundary map. Prior to Sept. 22, 1950, at site 0.5 mi (0.8 km) downstream at different datum.

REMARKS.--Records fair. Many diversions for irrigation above station. All of the flow may be diverted at times. During the spring, high-water natural overflow occurs at many points along channel above and below gage.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 52 ft^3/s (1.47 m^3/s) Sept. 6, 1951, gage height, 4.72 ft (1.439 m); maximum gage height, 4.93 ft (1.503 m) Mar. 21, 1966 (backwater from ice); no flow most of each season.

EXTREMES FOR CURRENT SEASON.--Maximum discharge, 45 ft^3/s (1.27 m^3/s) Mar. 27, gage height, 4.44 ft (1.353 m), backwater from ice; no flow most of season.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			0	35	.13	0	14				0	
2			0	36	.10	0	9.2				0	
3			0	36	.10	0	7.4				---	
4			0	23	.10	0	4.7				---	
5			0	14	.10	0	2.9				---	
6			0	9.2	.07	0	2.1				---	
7			0	8.8	.10	0	1.4				---	
8			0	9.4	.03	0	.86				---	
9			0	8.7	.07	0	.55				---	
10			0	6.5	.07	0	.35				---	
11			0	7.6	.07	0	.25				---	
12			0	7.0	.10	0	.25				---	
13			0	3.8	.10	0	.20				---	
14			0	1.9	.10	0	.17				---	
15			0	1.4	.07	.27	.13				---	
16			0	1.0	0	.40	.10				---	
17			.10	.70	0	.25	.07				---	
18			.70	.60	0	.10	.03				---	
19			3.8	.35	0	0	0				---	
20			4.7	.17	0	0	0				---	
21			5.2	.17	0	0	0				---	
22			5.2	.10	0	.07	0				---	
23			5.4	.20	0	.03	0				---	
24			5.8	.20	0	.16	0				---	
25			12	.17	0	8.6	0				---	
26			38	.20	0	31	0				---	
27			38	.78	0	24	0				---	
28			38	.55	0	28	0				---	
29			38	.30	0	31	0				---	
30			35	.20	0	21	0				---	
31			33	---	0	---	0		---		---	
TOTAL			262.90	213.99	1.31	144.88	44.66	0	0	0	---	
MEAN			8.48	7.13	.042	4.83	1.44	0	0	0	---	
MAX			38	36	.13	31	14	0	0	0	---	
MIN			0	.10	0	0	0	0	0	0	---	
AC-FT			521	424	2.6	287	89	0	0	0	---	

THE SEASON MARCH TO OCTOBER AC-FT 1,320

06137570 BOXELDER CREEK NEAR ROCKY BOY, MT

LOCATION.--Lat 48°18'07", long 109°50'37", in SW¼SW¼NW¼ sec.6, T.29 N., R.14 E., Hill County, Hydrologic Unit 10050005, on right bank 1,000 ft (305 m) upstream from Bonneau Reservoir, 4,000 ft (1,219 m) downstream from Wolf Creek, and 4.1 mi (6.6 km) northwest of Rocky Boy Agency.

DRAINAGE AREA.--48.2 mi^2 (125 km^2).

PERIOD OF RECORD.--October 1975 to September 1976.

GAGE.--Water-stage recorder. Altitude of gage is 3,225 ft (983 m).

REMARKS.--Records good except those for winter period, which are fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 67 ft^3/s (1.90 m^3/s) Mar. 18, 1976, gage height, 5.19 ft (1.582 m); maximum gage height, 5.68 ft (1.731 m) Jan. 17, 1976 (backwater from ice); minimum discharge, 0.64 ft^3/s (0.018 m^3/s) Sept. 17, 1976, gage height, 3.79 ft (1.155 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 30 ft^3/s (0.850 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Jan. 17	1400	ice jam		*5.68	1.731	June 17	0500	37.1	1.05	4.86	1.481
Mar. 18	0030	*67	1.90	5.19	1.582	June 23	1130	36.4	1.03	4.85	1.478

Minimum discharge, 0.64 ft^3/s (0.018 m^3/s) Sept. 17, gage height, 3.79 ft (1.155 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	9.5	9.0	11	7.6	4.7	12	6.4	4.6	10	2.5	1.3
2	9.8	9.2	11	9.0	7.6	4.3	8.9	6.4	4.4	9.8	2.3	.97
3	9.5	9.2	20	8.0	7.1	4.0	6.9	6.2	4.6	8.6	3.0	.97
4	8.9	8.9	17	8.2	6.8	4.4	6.6	6.6	4.9	8.1	3.5	.85
5	8.6	8.9	12	8.2	6.4	7.0	7.8	7.4	7.1	7.8	5.0	.80
6	9.2	8.9	11	7.8	6.4	17	11	7.8	6.0	7.3	4.1	.80
7	9.5	8.9	11	7.2	8.2	15	13	7.0	9.9	6.8	3.4	1.2
8	14	8.6	11	6.6	12	15	13	6.7	6.9	6.8	3.1	1.6
9	14	8.6	13	7.2	17	16	11	6.4	5.9	7.3	3.0	1.3
10	15	8.1	11	7.6	13	16	9.7	6.1	4.9	8.1	4.1	1.1
11	14	8.0	9.0	8.4	8.6	17	8.8	6.3	4.3	6.8	5.6	1.1
12	13	7.6	8.4	8.2	7.6	14	8.5	8.0	3.9	8.4	4.8	1.0
13	15	7.8	8.0	7.8	6.6	12	8.5	7.3	3.7	8.1	4.0	1.0
14	17	8.0	7.4	7.2	7.1	11	7.9	7.6	8.9	6.6	3.5	1.0
15	17	8.0	8.4	7.4	6.8	10	7.4	8.5	9.4	6.0	2.9	.95
16	14	8.0	8.0	10	6.2	14	7.8	7.3	12	5.6	2.6	.80
17	13	8.0	7.6	14	6.0	34	7.7	6.6	25	4.8	2.8	.76
18	11	8.0	9.0	16	5.8	40	7.0	6.3	11	4.4	2.8	.88
19	10	8.0	10	17	5.8	30	8.2	6.0	7.2	4.8	2.6	.90
20	10	7.6	11	10	5.6	12	9.1	5.8	6.1	5.2	2.2	1.0
21	10	8.0	11	8.9	5.6	8.4	8.1	5.6	5.9	4.4	1.9	.90
22	11	8.5	10	8.9	5.8	7.8	7.4	5.6	10	4.0	1.7	1.1
23	11	8.6	10	8.1	6.6	11	7.6	5.4	19	3.5	1.2	.80
24	11	9.8	10	10	8.4	8.8	7.4	5.3	22	2.5	1.9	.80
25	10	9.8	11	8.4	6.6	8.0	7.0	5.5	14	3.0	1.6	.88
26	10	9.8	11	8.0	6.0	6.9	8.8	5.7	23	2.8	1.8	.88
27	9.8	10	19	11	5.8	7.6	8.3	5.3	15	3.0	1.5	.88
28	9.8	10	11	12	5.6	6.3	7.6	4.9	13	3.0	1.6	.92
29	9.8	10	11	11	5.2	5.9	7.2	5.2	12	2.8	1.7	.97
30	9.8	8.0	13	9.8	---	6.1	6.7	4.8	10	2.8	1.4	1.0
31	9.8	---	12	7.8	---	7.3	---	4.6	---	2.8	1.4	---
TOTAL	354.5	260.3	341.8	290.7	213.8	381.5	256.9	194.6	295.2	175.9	85.5	29.49
MEAN	11.4	8.68	11.0	9.38	7.37	12.3	8.56	6.28	9.84	5.67	2.76	.98
MAX	17	10	20	17	17	40	13	8.5	25	10	5.6	1.6
MIN	8.6	7.6	7.4	6.6	5.2	4.0	6.6	4.6	3.7	2.5	1.2	.76
AC-FT	703	516	678	577	424	757	510	386	586	349	170	58

WTR YR 1976 TOTAL 2880.19 MEAN 7.87 MAX 40 MIN .76 AC-FT 5710

06140500 MILK RIVER AT HAVRE, MT

LOCATION.--Lat 48°33'23", long 109°40'14", in NE¼SE¼SE¼ sec.5, T.32 N., R.16 E., Hill County, Hydrologic Unit 10050004, on upstream side of highway bridge on 7th Avenue East in Havre, 30 ft (9.1 m) downstream from Bullhook Creek, 9.4 mi (15.1 km) downstream from Big Sandy Creek, and 17 mi (27 km) downstream from Fresno Dam.

DRAINAGE AREA.--5,844 mi^2 (15,136 km^2), of which 670 mi^2 (1,735 km^2) is probably noncontributing.

PERIOD OF RECORD.--May to November 1898, April 1899 to November 1922, March, April 1923, March, April 1952 (gage heights only, in WSP 1260-B), June 1953 (in WSP 1320-B), August 1954 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1899-1900, 1902-4, 1907-8, 1909(M), 1912, 1917(M), 1920(M). WSP 1729: Drainage area.

GAGE.--Nonrecording gage read once or twice daily. Datum of gage is 2,461.11 ft (750.146 m) above mean sea level (levels by Corps of Engineers). Prior to Nov. 4, 1902, nonrecording gage at site 0.5 mi (0.8 km) upstream at different datum. Nov. 4, 1902, to Nov. 25, 1910, nonrecording gage at datum 0.47 ft (0.143 m) higher, Mar. 9, 1911, to July 13, 1920, nonrecording gage at present datum, and July 14, 1920, to Sept. 30, 1922, nonrecording gage at datum 4.00 ft (1.219 m) higher, all at site 30 ft (9.1 m) downstream.

REMARKS.--Records fair except those for winter period, which are poor. Bullhook Creek flood-control project is designed to bypass damaging floods to Milk River channel several miles downstream. Diversions for irrigation of about 6,000 acres (24.3 km^2) above station. Since 1917, flow increased during irrigation season by water from St. Mary Canal which diverts from the St. Mary River near Babb (see p. 33). Flow regulated by Fresno Reservoir (see p. 582).

AVERAGE DISCHARGE.--17 years (1899-1916), prior to operation of St. Mary Canal, 273 ft^3/s (7.731 m^3/s) 197,800 acre-ft/yr (244 hm^3/yr); 28 years (1916-22, 1954-76), 433 ft^3/s (12.26 m^3/s), 313,700 acre-ft/yr (387 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 20,000 ft^3/s (566 m^3/s) Apr. 12, 1899, gage height, 19.3 ft (5.88 m), present datum, from floodmarks, from rating curve extended above 5,200 ft^3/s (147 m^3/s); no flow at times in several years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,340 ft^3/s (37.9 m^3/s) May 10, gage height, 7.90 ft (2.408 m), from graph based on gage readings; minimum daily, 15 ft^3/s (0.42 m^3/s) Nov. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	260	316	110	145	250	100	508	812	1140	700	1190	840
2	260	497	150	140	230	110	448	808	1090	708	1190	852
3	250	515	300	130	220	130	459	824	1060	720	1190	884
4	187	532	200	140	200	150	662	828	996	724	1190	860
5	187	539	193	140	190	127	683	896	948	720	1200	860
6	208	539	169	130	180	127	669	1030	952	704	1160	860
7	193	543	171	120	200	121	669	1060	916	1140	1020	860
8	198	511	175	110	220	108	708	1170	852	1130	1060	756
9	198	525	171	120	210	105	716	1240	844	1050	1070	732
10	200	539	147	150	200	101	712	1300	828	1030	1080	1110
11	208	529	100	190	190	92	623	1110	848	1040	960	1060
12	210	522	84	190	180	76	112	1160	776	1090	972	658
13	228	529	82	180	170	100	84	1160	740	1020	984	655
14	240	543	80	190	170	108	230	1170	772	1010	988	644
15	349	553	90	190	160	100	487	1150	693	1020	984	427
16	352	529	120	190	160	108	508	1170	669	984	972	427
17	361	483	130	200	160	103	592	1160	613	1010	976	325
18	358	30	100	210	160	87	592	1150	518	1080	988	307
19	349	28	110	180	150	87	599	1150	508	1100	980	295
20	355	32	130	200	140	90	567	1200	516	1110	968	288
21	367	40	150	200	140	119	595	1240	550	1010	988	295
22	511	28	150	200	140	169	595	1270	564	1010	988	346
23	557	15	140	190	140	322	581	1240	448	1000	988	349
24	546	115	150	170	135	396	137	1250	349	1000	992	379
25	557	173	150	150	130	483	43	1240	100	1020	924	376
26	546	110	150	160	125	574	438	1240	29	1010	924	382
27	546	110	150	170	120	581	588	1150	119	1230	916	399
28	518	110	150	180	115	578	546	1130	403	1240	924	361
29	203	105	150	200	110	567	812	1110	630	1260	928	385
30	185	100	150	210	---	602	816	1110	683	1300	916	389
31	185	---	150	240	---	546	---	1110	---	1180	784	---
TOTAL	9872	9740	4452	5315	4895	7067	15779	34638	20123	31400	31394	17369
MEAN	318	325	144	171	169	228	526	1117	671	1013	1013	579
MAX	557	553	300	240	250	602	816	1300	1110	1300	1200	1110
MIN	185	15	80	110	110	76	43	808	29	700	784	288
AC-FT	19580	19320	8830	10540	9710	14020	31300	68700	39910	62280	62270	34450

CAL YR 1975 TOTAL 215463 MEAN 590 MAX 3580 MIN 15 AC-FT 427400
WTR YR 1976 TOTAL 192044 MEAN 525 MAX 1300 MIN 15 AC-FT 380900

06144100 WALBURGER COULEE BELOW DIVERSIONS, NEAR GOVENLOCK, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°17'30", long 110°01'20", in SW¼ sec.13, T.4, R.1 W., fourth meridian, Hydrologic Unit 10050007, on right bank 3 mi (5 km) north of Walburger ranch and 10 mi (16 km) northwest of Govenlock.

PERIOD OF RECORD.--March 1963 to current season. July 1960 to current season in reports of Department of the Environment, Canada. Seasonal records only.

GAGE.--Water-stage recorder. Altitude of gage is 3,100 ft (945 m), from topographic map.

REMARKS.--Records good. Established to measure releases from Middle Creek Reservoir to Lodge Creek. Releases may be stored or diverted for irrigation above the station.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge recorded, 58 ft^3/s (1.64 m^3/s) Mar. 29, 1966; maximum gage height, 5.71 ft (1.740 m) Apr. 14, 1965 (backwater from ice); no flow most of each season.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				.20		0						
2				.17		0						
3				.14		0						
4				.12		0						
5				.10		0						
6				.09		0						
7				.08		0						
8				.08		0						
9				.09		0						
10				.06		0						
11				.05		0						
12				.04		0						
13				.04		0						
14				.04		0						
15				.04		0						
16				.04		0						
17				.04		0						
18				.04		0						
19				.04		0						
20				.04		0						
21				.05		0						
22				.07		.01						
23				.13		.01						
24				.10		.01						
25				.06		.01						
26				.07		.03						
27				.02		.01						
28				.01		0						
29				.01		0						
30				0		0						
31				---		---			---			
TOTAL				2.06	0	.08	0	0	0	0		
MEAN				.069	0	.003	0	0	0	0		
MAX				.20	0	.03	0	0	0	0		
MIN				0	0	0	0	0	0	0		
AC-FT				4.1	0	.2	0	0	0	0		

THE SEASON APRIL TO OCTOBER AC-FT 4.2

NOTE.--Maximum daily discharge may have been greater prior to activation of gage for the season. Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

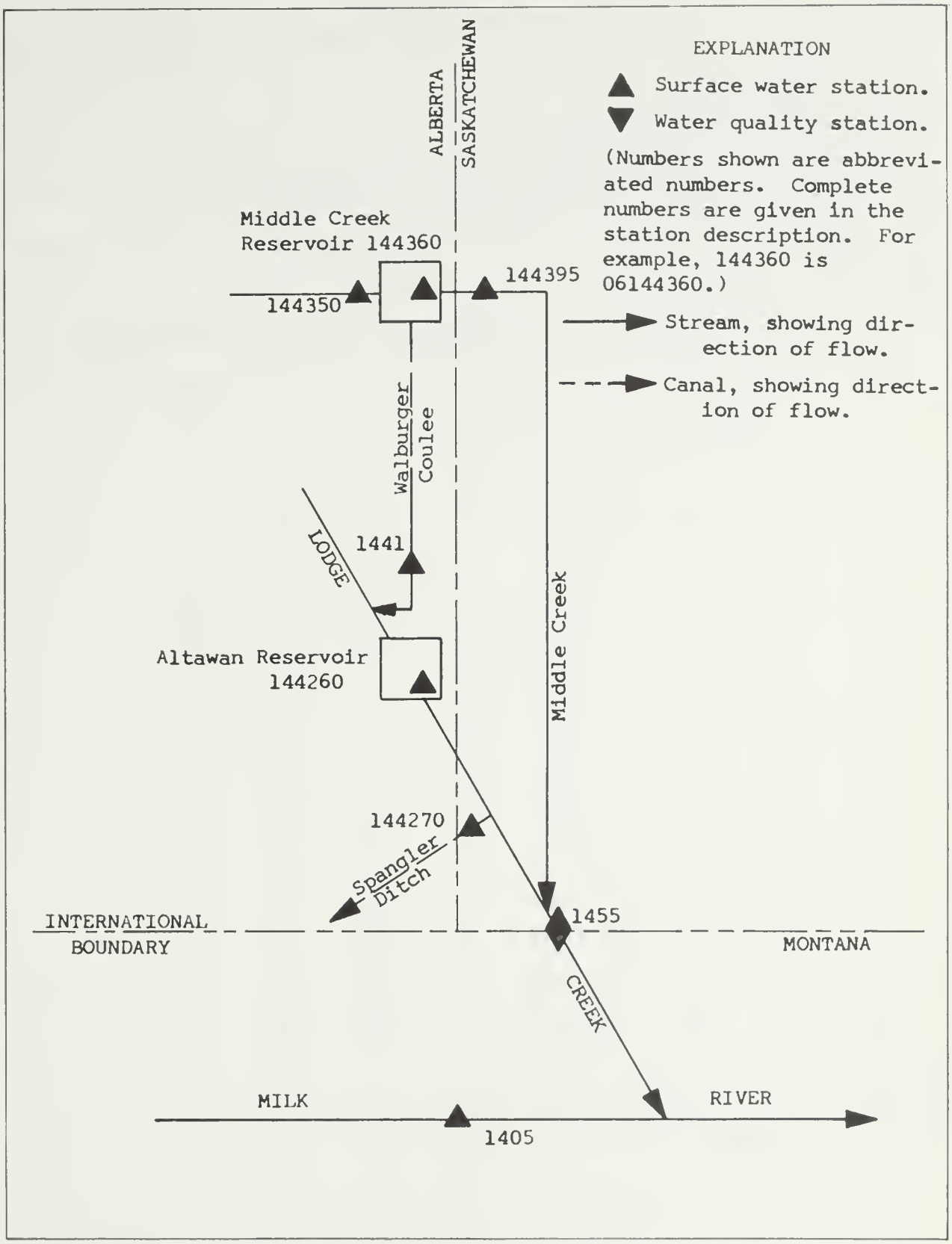


Figure 8 Schematic diagram showing diversions and storage in Lodge Creek basin in Canada

06144270 SPANGLER DITCH NEAR GOVENLOCK, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°09'16", long 109°54'58", in NW¼ sec.26, T.2, R.30 W., third meridian, Hydrologic Unit 10050007, on right bank 0.9 mi (1.4 km) south of Altawan Dam and 6.8 mi (10.9 km) southwest of Govenlock.

PERIOD OF RECORD.--March 1966 to current season. 1915 to 1936, March 1950 to current season, in reports of Department of the Environment, Canada. Seasonal records only. Estimates of seasonal diversion only in most years prior to March 1950.

GAGE.--Water-stage recorder. Altitude of gage is 2,920 ft (890 m), from topographic map. Prior to March 1950, nonrecording gages at several sites within 2 mi (3 km) of present site at different datums. March 1950 to July 8, 1960, water-stage recorder at site 350 ft (107 m) downstream at different datum.

REMARKS.--Records good. Canal diverts water from right bank of Lodge Creek in SW¼ sec.35, T.2, R.30 W., third meridian, for irrigation of 1,320 acres (5.34 km^2) under Spangler irrigation project.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 65 ft^3/s (1.84 m^3/s) Apr. 22, 1950; no flow most of each season.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1					0		0	19	0			
2					0		0	18	0			
3					0		0	18	0			
4					0		0	18	0			
5					0		0	18	0			
6					0		0	12	0			
7					0		0	8.8	0			
8					0		0	.43	0			
9					0		0	0	0			
10					0		0	0	0			
11					0		0	0	.02			
12					0		0	0	.08			
13					.86		0	0	.06			
14					27		0	0	.04			
15					36		0	0	0			
16					42		0	0	0			
17					45		0	0	0			
18					46		0	0	0			
19					47		0	0	0			
20					47		20	0	0			
21					39		28	0	0			
22					38		25	0	0			
23					35		25	0	0			
24					29		25	0	0			
25					14		20	0	0			
26					0		18	0	0			
27					0		20	0	0			
28					0		20	0	0			
29					0		20	0	0			
30					0		20	0	0			
31				---	0	---	20	0	---			
TOTAL	---		0	0	445.86	0	261	112.23	.20	0		
MEAN	---		0	0	14.4	0	8.42	3.62	.007	0		
MAX	---		0	0	47	0	28	19	.08	0		
MIN	---		0	0	0	0	0	0	0	0		
AC-FT	---		0	0	884	0	518	223	.4	0		

THE SEASON MARCH TO OCTOBER AC-FT 1,630

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

06144350 MIDDLE CREEK NEAR ALBERTA BOUNDARY

(International gaging station)

LOCATION.--Lat 49°25'30", long 110°03'08", in SW¼ sec.34, T.5, R.1 W., fourth meridian, Hydrologic Unit 10050007, on left bank 2 mi (3 km) upstream from Middle Creek Reservoir and 18 mi (29 km) northwest of Govenlock, Saskatchewan.

DRAINAGE AREA.--116 mi^2 (300 km^2).

PERIOD OF RECORD.--March 1963 to current season. June 1910 to April 1915 and September 1949 to current season in reports of Department of the Environment, Canada. Seasonal records only. Published as "at McKinnon's Ranch" 1910-15.

GAGE.--Water-stage recorder. Datum of gage is 3,381.13 ft (1,030.568 m) above mean sea level (Geodetic Surveys of Canada datum). Prior to Mar. 1, 1951, nonrecording gages, and Mar. 1, 1951, to July 5, 1961, water-stage recorder, at site 0.3 mi (0.5 km) downstream at different datums.

REMARKS.--Records good except those for February and March, which are fair. Minor diversions for irrigation above station.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,980 ft^3/s (141 m^3/s) Apr. 15, 1952, gage height, 10.27 ft (3.130 m), site and datum then in use, from rating curve extended above 600 ft^3/s (17.0 m^3/s) on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES FOR CURRENT SEASON.--Maximum discharge, 262 ft^3/s (7.42 m^3/s) Mar. 19, gage height, 6.29 ft (1.917 m); minimum daily, 0.20 ft^3/s (0.006 m^3/s) Feb. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		---	.49	72	1.5	1.1	.69	.70	.52	.60	.59	
2		---	.48	79	1.6	1.0	.68	.64	.51	.62	---	
3		---	.48	54	1.5	1.1	.73	.67	.51	.59	---	
4		---	.49	47	1.4	1.2	.73	.64	.53	.56	---	
5		---	.45	50	1.5	1.3	.70	.81	.52	.59	---	
6		---	.48	71	1.5	1.2	.67	.90	.52	.64	---	
7		---	.49	83	1.4	1.6	.62	.83	.58	.66	---	
8		---	.55	83	1.4	1.3	.63	.71	.58	.66	---	
9		---	.54	70	1.3	1.1	.60	.67	.57	.65	---	
10		---	.55	50	1.3	1.0	.55	.72	.57	.61	---	
11		---	.57	38	1.2	.98	.59	.69	.57	.56	---	
12		---	.53	30	1.2	.89	.73	.65	.60	.57	---	
13		---	.52	24	1.2	.85	.68	.70	.60	.58	---	
14		---	.54	16	1.1	.85	.62	.68	.60	.46	---	
15		---	.54	11	1.2	.85	.62	.63	.57	.50	---	
16		---	.67	7.9	1.1	.92	.62	.68	.56	.59	---	
17		.20	36	5.6	1.1	.90	.64	.59	.58	.58	---	
18		.26	95	4.0	1.1	.87	.64	.55	.51	.58	---	
19		.29	188	2.7	1.0	.81	.64	.57	.54	.60	---	
20		.30	115	2.1	1.1	.74	.67	.53	.54	.61	---	
21		.31	55	1.8	.98	.81	.73	.51	.55	.61	---	
22		.36	27	1.6	.96	1.7	.66	.54	.55	.62	---	
23		1.0	71	1.7	.99	1.1	.67	.50	.56	.62	---	
24		2.1	74	1.6	.96	.86	.67	.50	.56	.63	---	
25		2.4	41	1.5	.96	.87	.67	.49	.59	.64	---	
26		1.1	40	1.5	.98	1.0	.69	.53	.58	.64	---	
27		.61	52	1.4	.90	.83	.63	.44	.58	.63	---	
28		.46	50	1.4	.88	.76	.68	.46	.59	.61	---	
29		.48	38	1.3	.90	.75	.65	.48	.60	.60	---	
30		---	31	1.3	.93	.72	.78	.50	.57	.60	---	
31		---	40	---	1.1	---	.79	.52	---	.60	---	
TOTAL	---	---	961.37	815.4	36.24	29.96	20.67	19.03	16.81	18.61	---	
MEAN	---	---	31.0	27.2	1.17	1.00	.67	.61	.56	.60	---	
MAX	---	---	188	83	1.6	1.7	.79	.90	.60	.66	---	
MIN	---	---	.45	1.3	.88	.72	.55	.44	.51	.46	---	
AC-FT	---	---	1910	1620	72	59	41	38	33	37	---	

THE SEASON MARCH TO OCTOBER AC-FT 3,800

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

06144395 MIDDLE CREEK BELOW MIDDLE CREEK RESERVOIR, NEAR GOVENLOCK, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°24'44", long 109°55'06", in SW¼ sec.25, T.5, R.30 W., third meridian, Hydrologic Unit 10050007, on right bank 9.8 mi (15.8 km) downstream from Middle Creek Reservoir and 14 mi (23 km) northwest of Govenlock.

DRAINAGE AREA.--161 mi^2 (417 km^2).

PERIOD OF RECORD.--April 1972 to current season. July 1909 to May 1931, September 1935 to October 1936, and April 1972 to current season in reports of Department of the Environment, Canada. Seasonal records only. Published as "at Ross Ranch" 1909-20, "at Downes and Robert's Ranch" 1920-23, and "at Wright's Ranch" 1920-31, 1935-36. Discharge measurements only during 1928 season.

GAGE.--Water-stage recorder. Altitude of gage is 3,300 ft (1,010 m), from topographic map. Prior to April 1972, nonrecording gages at two sites within 2 mi (3 km) of present site, at different datums.

REMARKS.--Records fair. Flow completely regulated by Middle Creek Reservoir (see p.180). Many diversions for irrigation above station. Flow may be diverted to Lodge Creek through Middle Creek Reservoir. Diversions for irrigation of 920 acres (3.72 km^2) between Middle Creek Reservoir and station.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge recorded, 58 ft^3/s (1.64 m^3/s) Apr. 18, 1974; no flow at times most seasons.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			---	.03	0		0	1.9		0		
2			---	.01	0		0	1.9		0		
3			---	0	0		0	1.8		0		
4			---	0	0		0	3.0		0		
5			---	0	0		0	2.2		0		
6			---	0	0		0	1.3		0		
7			---	0	0		0	1.0		41		
8			---	0	0		0	.44		5.6		
9			---	0	0		0	.12		.31		
10			---	0	0		0	.23		.05		
11			---	0	6.1		0	.10		0		
12			---	0	17		0	.02		0		
13			---	0	18		0	0		0		
14			---	0	17		0	0		0		
15			---	0	14		0	0		0		
16			---	0	17		0	0		0		
17			---	0	12		0	0		0		
18			---	0	19		0	0		0		
19			---	0	4.7		0	0		0		
20			---	0	.93		0	0		0		
21			---	0	.06		0	0		0		
22			---	0	0		0	0		0		
23			---	0	0		0	0		0		
24			---	0	0		2.1	0		0		
25			---	0	0		2.2	0		0		
26			---	0	0		.82	0		0		
27			---	0	0		.54	0		0		
28			---	0	0		.49	0		0		
29			---	0	0		.69	0		0		
30			.05	0	0		1.9	0		0		
31			.04	---	0	---	1.7	0	---	0		
TOTAL			---	.04	125.79	0	10.44	14.01	0	46.96		
MEAN			---	.001	4.06	0	.34	.45	0	1.51		
MAX			---	.03	19	0	2.2	3.0	0	41		
MIN			---	0	0	0	0	0	0	0		
AC-FT			---	.08	250	0	21	28	0	93		

THE SEASON APRIL TO OCTOBER AC-FT 391

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

06145500 LODGE CREEK BELOW MCRAE CREEK, AT INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 49°00'20", long 109°43'05", in SW¼ sec.5, T.1, R.28 W., third meridian, in Saskatchewan, Hydrologic Unit 10050007, on right bank 0.3 mi (0.5 km) downstream from McRae Creek, 0.4 mi (0.6 km) north of international boundary, 0.8 mi (1.3 km) northeast of Willow Creek Port of Entry, and 31 mi (50 km) north of Havre, Mt.

DRAINAGE AREA.--818 mi^2 (2,119 km^2).

PERIOD OF RECORD.--October 1951 to current season (seasonal records only). Prior to October 1951, records were collected on both McRae Coulee (1927-51) and Lodge Creek above McRae Coulee (1910-51). Summations are equivalent to records at this site. Prior to March 1965, published as "below McRae Coulee".

GAGE.--Water-stage recorder. Datum of gage is 2,731.0 ft (832.41 m) above mean sea level (International Boundary Survey datum).

REMARKS.--Records fair except those for winter period, which are poor. Natural flow affected by numerous storage reservoirs, diversions for irrigation of about 3,000 acres (12.1 km^2) and return flow from irrigated areas.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,760 ft^3/s (220 m^3/s) June 14, 1962, gage height, 14.40 ft (4.389 m); no flow at times each season. Flood of June 14, 1962, is probably the highest since 1910.

EXTREMES FOR CURRENT SEASON.--Maximum discharge, 1,300 ft^3/s (36.8 m^3/s) Mar. 20, gage height, 11.85 ft (3.612 m) backwater from ice; no flow on many days.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		---	37	136	9.6	1.6	.15	.01	0	0	0	
2		---	25	208	8.5	1.3	.13	.01	0	0	0	
3		---	19	283	6.8	.87	.11	.01	0	0	---	
4		---	15	188	7.3	.66	.09	0	0	0	---	
5		---	8.0	133	5.6	.58	.09	.01	0	0	---	
6		---	7.0	123	5.2	.50	.10	.01	0	.05	---	
7		---	6.0	139	6.4	.68	.16	0	0	.01	---	
8		---	5.5	156	5.4	.71	.10	0	0	.01	---	
9		---	4.5	156	4.6	.66	.09	0	0	0	---	
10		---	4.5	139	4.0	.53	.09	0	0	0	---	
11		---	4.5	115	3.7	.53	.08	0	0	0	---	
12		---	4.5	94	3.9	.48	.07	.01	0	0	---	
13		---	5.0	81	3.6	.48	.07	.01	0	0	---	
14		---	5.0	74	7.6	.43	.05	.01	1.7	0	---	
15		---	4.3	62	6.4	.28	.05	0	31	0	---	
16		---	5.8	52	4.8	.26	18	0	31	0	---	
17		---	56	46	6.6	.22	16	0	19	0	---	
18		---	516	38	8.0	.18	12	0	7.1	0	---	
19		---	557	31	4.3	.15	9.0	0	3.4	0	---	
20		---	928	28	3.0	.15	6.6	0	1.6	0	---	
21		---	991	23	2.2	.16	5.2	0	.97	0	---	
22		---	642	18	19	.19	3.1	0	.53	0	---	
23		---	474	19	14	.16	1.9	0	.26	0	---	
24		---	455	17	9.8	.18	1.3	0	.09	0	---	
25		---	380	17	9.8	.16	.87	0	.02	0	---	
26		4.0	234	16	11	.16	.63	0	.01	0	---	
27		4.0	189	19	8.5	.18	.41	0	.01	0	---	
28		29	217	14	6.2	.20	.19	0	.01	0	---	
29		44	194	11	4.2	.23	.08	0	0	0	---	
30		---	157	9.6	2.7	.22	.11	0	0	0	---	
31		---	136	---	2.2	---	.02	0	---	0	---	
TOTAL		---	6286.6	2455.6	204.9	13.09	76.84	.08	96.69	.07	---	
MEAN		---	203	81.5	6.61	.44	2.48	.003	3.22	.002	---	
MAX		---	991	283	19	1.6	18	.01	31	.05	---	
MIN		---	4.3	9.6	2.2	.15	.02	0	0	0	---	
AC-FT		---	12470	4850	406	26	152	.2	192	.1	---	

THE SEASON MARCH TO OCTOBER AC-FT 18,100

RESERVOIRS IN LODGE CREEK BASIN IN SASKATCHEWAN

(International gaging stations)

06144260 ALTAWAN RESERVOIR.--Lat 49°09'59", long 109°55'03", in NE¼SW¼ sec.35, T.2, T.30 W., third meridian, Hydrologic Unit 10050007, at dam on Lodge Creek, 6.3 mi (10.1 km) southwest of Govenlock. DRAINAGE AREA, 365 mi^2 (945 km^2). PERIOD OF RECORD, February 1966 to current season. February 1960 to current season in reports of Department of the Envirnoment, Canada. Seasonal records only. Water-stage recorder. Datum of gage is at mean sea level (PFRA datum). Prior to July 7, 1967, nonrecording gage in gate well read every ten days during irrigation season.

Reservoir is formed by earthfill dam with concrete spillway and control works as well as an emergency dirt spillway, completed in 1959. Total capacity is 5,830 acre-ft (7.19 hm^3) between elevation 2,917.6 ft (889.28 m), bottom of outlet, and 2,952.5 ft (899.92 m), maximum design level. No dead storage. Elevation of top of dam, 2,960.0 ft (902.21 m); elevation of natural emergency spillway crest, 2,955.0 ft (900.68 m); and elevation of spillway crest, 2,949.0 ft (898.86 m). Figures given herein represent total contents. Water is used for irrigation. This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 7,080 acre-ft (8.73 hm^3) May 7, 1967, elevation, 2,955.37 ft (900.797 m), from highwater mark; no storage Mar. 1, 1960.

EXTREMES FOR CURRENT SEASON: Maximum contents, 6,690 acre-ft (8.25 hm^3) Mar. 18, elevation, 2,954.51 ft (900.535 m); minimum, 2,920 acre-ft (3.60 hm^3) Nov. 2, elevation, 2,944.36 ft (897.441 m).

06144360 MIDDLE CREEK RESERVOIR.--Lat 49°24'20", long 109°59'01", in NE¼ sec.21, T.5, R.30 W., third meridian, Hydrologic Unit 10050007, at dam on Middle Creek, 0.7 mi (1.1 km) east of Alberta-Saskatchewan boundary, 6.3 mi (10.1 km) west of Battle Creek, and 15 mi (24 km) northwest of Govenlock. DRAINAGE AREA, 130 mi^2 (337 km^2). PERIOD OF RECORD, February 1966 to current season. Occasional nonrecording gage readings in 1937 and 1939-51, March 1952 to current season in reports of Department of the Environment, Canada. Seasonal records only. Water-stage recorder. Datum of gage is at mean sea level (PFRA datum). Prior to July 7, 1967, nonrecording gage in gate well read every ten days during irrigation season.

Reservoir is formed by earthfill dam with concrete control works and sod spillway at elevation 3,383.0 ft (1,031.14 m) on Middle Creek and at Ducks Unlimited outlet, constructed in 1937. Total capacity, 13,080 acre-ft (16.1 hm^3) between elevation 3,368.60 ft (1,026.749 m), invert of outlet pipe on Middle Creek, and 3,383.0 ft (1,031.14 m), natural spillway. Invert of outlet pipe at Ducks Unlimited outlet is at elevation 3,372.04 ft (1,027.798 m). Figures given herein represent total contents. Water is used for irrigation and to maintain levels of Orleans Lakes. Water may be released to Lodge Creek via Ducks Unlimited outlet Simms Lake and Walburger Coulee. Spillway does not return water to Middle Creek, may return to Lodge Creek via Walburger Coulee. This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 23,080 acre-ft (28.5 hm^3) Apr. 13, 1952, elevation, 3,387.92 ft (1,032.638 m); no storage at times.

EXTREMES FOR CURRENT SEASON: Maximum contents, 9,160 acre-ft (11.3 hm^3) Apr. 15, elevation, 3,379.78 ft (1,030.157 m); minimum, 5,460 acre-ft (6.73 hm^3) Oct. 22, elevation, 3,376.36 ft (1,029.115 m).

Monthend contents, in acre-feet, year October 1975 to October 1976

Date	Altawan Reservoir	Middle Creek Reservoir
Oct. 31	4,270	5,760
Nov. 30	-	-
Dec. 31	-	-
Jan. 31	-	-
Feb. 28	4,680	5,720
Mar. 31	6,080	7,830
Apr. 30	5,790	9,070
May 31	4,700	7,940
June 30	4,960	7,820
July 31	3,920	7,010
Aug. 31	3,520	6,360
Sept.30	3,000	5,840
Oct. 31	2,920	5,490

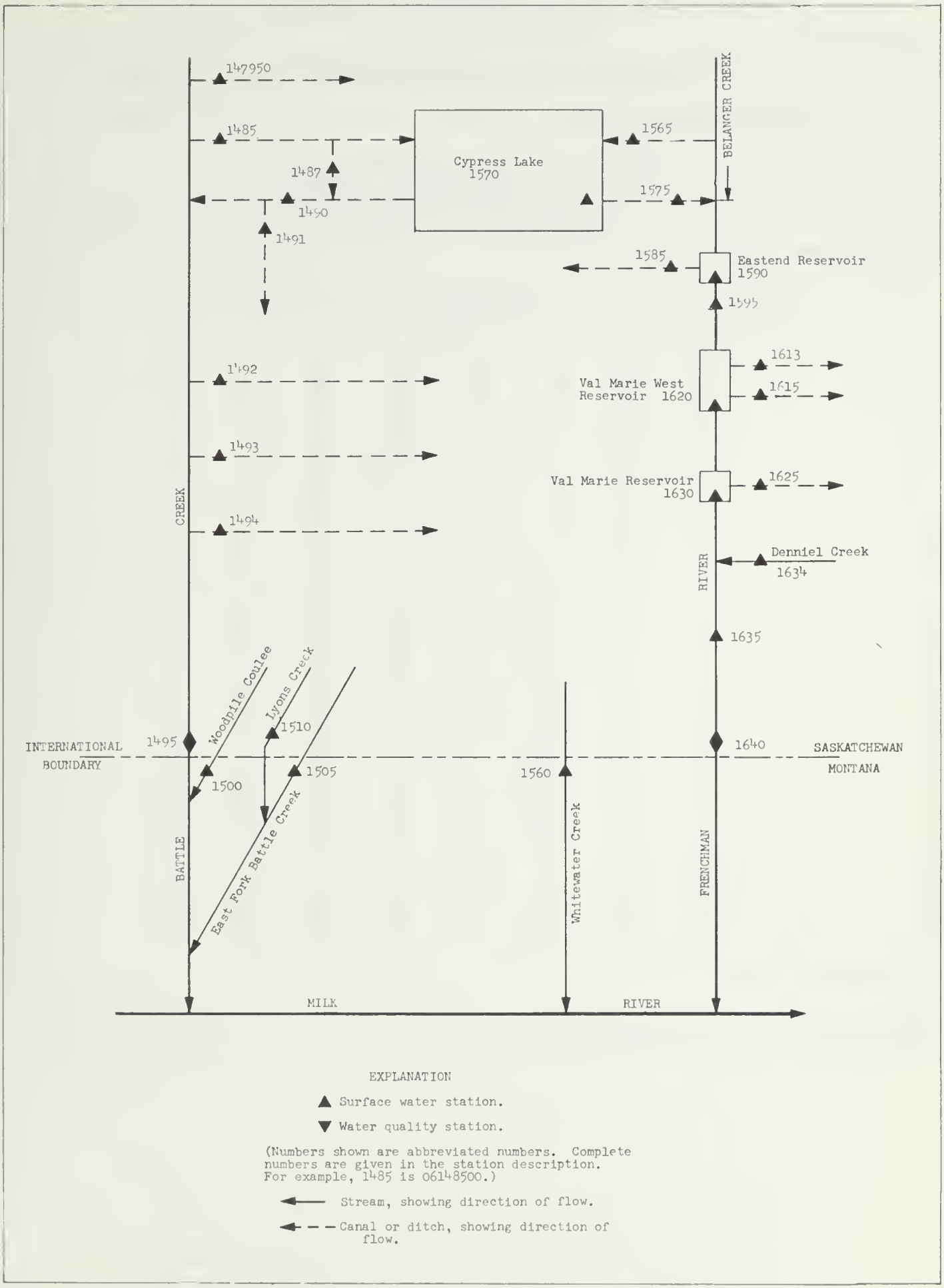


Figure 9. Schematic diagram showing diversions and storage in Battle Creek and Frenchman River basins in Canada.

06147950 GAFF DITCH NEAR MERRYFLAT, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°26'05", long 109°50'07", in NW¼ sec.34, T.5, R.29 W., third meridian, Hydrologic Unit 10050008, on left bank about 200 ft (61 m) downstream from headgates, and 4 mi (6 km) southwest of Merryflat.

PERIOD OF RECORD.--March 1972 to current season. March 1964 to current season in reports of Department of the Environment, Canada. Seasonal records only.

GAGE.--Water-stage recorder. Altitude of gage is 3,350 ft (1,020 m), from topographic map.

REMARKS.--Records good. Water is diverted from left bank of Battle Creek in NW¼ sec.34, T.5. R.29 W., third meridian, for irrigation of about 890 acres (3.60 km^2) along Battle Creek.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 42 ft^3/s (1.19 m^3/s) Apr. 22, 1971; no flow at times each season.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			0	9.0	17	9.1	1.4	.24	.10	.10		
2			0	11	16	9.2	1.6	.26	.10	.10		
3			0	9.7	16	8.4	2.0	.26	.10	.10		
4			0	15	15	8.3	1.8	.11	.10	.10		
5			0	23	15	10	.68	.11	.10	.10		
6			0	24	15	11	.22	.12	.10	.10		
7			0	17	14	16	.16	.08	.10	.10		
8			0	16	14	18	.15	.08	.10	.10		
9			0	14	13	17	.13	.09	.10	.10		
10			0	15	13	15	.12	.08	.10	.10		
11			0	19	11	15	.13	.08	.10	.10		
12			0	18	10	14	.10	.09	.10	.10		
13			0	17	9.4	13	.08	.09	.10	.10		
14			0	17	4.8	13	.08	.08	.10	.10		
15			0	15	4.9	14	3.7	.08	.10	.10		
16			0	14	4.7	14	6.6	.07	.10	.10		
17			0	17	3.7	13	5.9	.08	.10	.10		
18			0	19	6.0	15	5.0	.08	.10	.10		
19			0	19	9.0	14	4.5	.08	.10	.10		
20			0	18	9.1	12	4.3	.08	.10	.10		
21			0	18	8.3	10	4.5	.08	.10	.10		
22			0	18	6.6	11	4.1	.07	.10	.10		
23			0	18	5.9	15	3.7	.06	.10	.10		
24			0	18	6.2	14	3.3	.06	.10	.10		
25			0	18	5.8	13	3.0	.05	.10	.10		
26			0	18	5.0	13	2.9	.06	.10	.10		
27			0	19	5.4	13	2.0	.06	.10	.10		
28			0	20	6.2	5.9	1.4	.06	.10	.10		
29			0	19	5.4	.77	.71	.08	.10	.10		
30			0	18	4.8	.85	.21	.08	.10	.10		
31			2.9	---	8.2	---	.20	.10	---	.10		
TOTAL			2.9	510.7	288.4	355.52	64.67	3.00	3.00	3.10		
MEAN			.094	17.0	9.30	11.9	2.09	.097	.10	.10		
MAX			2.9	24	17	18	6.6	.26	.10	.10		
MIN			0	9.0	3.7	.77	.08	.05	.10	.10		
AC-FT			5.8	1010	572	705	128	6.0	6.0	6.1		

THE SEASON MARCH TO OCTOBER AC-FT 2,440

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

06148500 CYPRESS LAKE WEST INFLOW CANAL NEAR WEST PLAINS, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°28'18", long 109°37'08", in SE¼ sec.18, T.6, R.27 W., third meridian, Hydrologic Unit 10050008, on left bank 2.5 mi (4.0 km) downstream from canal headgates, 5.5 mi (8.8 km) northeast of West Plains, and 13 mi (21 km) northwest of Consul.

PERIOD OF RECORD.--March 1939 to current season (seasonal records only). Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Altitude of gage is 3,210 ft (978 m), from topographic map. Prior to Oct. 16, 1956, at site 2.3 mi (3.7 km) upstream at different datum.

REMARKS.--Records good except those for winter period, which are poor. Canal diverts water from Battle Creek in NW¼ sec.1, T.6, R.28 W., third meridian, for storage in Cypress Lake. Part or all of flow may be returned to Battle Creek via wasteway and drain canal 0.4 mi (0.6 km) downstream.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 884 ft^3/s (25.0 m^3/s) Apr. 27, 1965; no flow at times each season.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		0	12	33	.44	0	18					
2		0	10	126	.47	0	18					
3		0	8.0	150	.37	0	17					
4		0	9.3	82	.26	0	16					
5		0	9.9	82	.29	0	13					
6		0	11	208	.25	0	9.0					
7		0	11	305	.11	0	7.7					
8		0	12	237	.10	.01	.56					
9		0	12	189	.06	21	.39					
10		0	12	140	.05	49	.41					
11		0	13	111	.05	33	.42					
12		0	13	63	.04	30	.61					
13		0	12	31	0	29	.47					
14		0	12	29	0	28	.47					
15		0	13	27	0	26	.58					
16		0	13	25	0	30	.43					
17		0	28	23	0	22	.41					
18		0	119	22	0	12	.35					
19		0	180	21	0	14	.36					
20		0	265	11	0	14	.29					
21		0	117	.74	0	15	.17					
22		0	97	2.8	0	14	.09					
23		0	125	10	0	14	.08					
24		0	129	9.9	0	25	.06					
25		2.0	105	9.9	0	40	.03					
26		16	91	7.4	0	32	.01					
27		19	66	1.3	0	28	0					
28		19	66	1.1	0	23	0					
29		15	66	.68	0	17	0					
30		---	53	.50	0	18	0					
31		---	29	---	0	---	0		---			
TOTAL		71.0	1719.2	1959.32	2.49	534.01	104.89	0	0	0		
MEAN		2.45	55.5	65.3	.080	17.8	3.38	0	0	0		
MAX		19	265	305	.47	49	18	0	0	0		
MIN		0	8.0	.50	0	0	0	0	0	0		
AC-FT		141	3410	3890	4.9	1060	208	0	0	0		

THE SEASON FEBRUARY TO OCTOBER AC-FT 8,710

NOTE.--Stage-discharge relation affected by ice Feb. 25 to Apr. 5. Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

06148700 CYPRESS LAKE WEST INFLOW CANAL DRAIN NEAR OXARAT, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°28'26", long 109°36'41", in NW¼ sec.17, T.6, R.27 W., third meridian, Hydrologic Unit 10050008, on left bank about 500 ft (152 m) downstream from drain gate on Cypress Lake west inflow canal, 0.5 mi (0.8 km) upstream from Battle Creek, and 4 mi (6 km) northwest of Oxarat Post Office.

PERIOD OF RECORD.--March 1963 to current season. March 1955 to current season in reports of Department of the Environment, Canada. Seasonal records only.

GAGE.--Water-stage recorder. Altitude of gage is 3,200 ft (975 m), from topographic map.

REMARKS.--Records fair. No gage-height record Feb. 26 to Apr. 5. Drain used as an emergency bypass to return diverted water to Battle Creek. It may also be used to return stored water from Cypress Lake when lake stage is high.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 450 ft^3/s (12.7 m^3/s) Apr. 20, 1955; no flow at times each season.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		---	5.0	.70		0	.01					
2		---	5.0	.40		0	.01					
3		---	5.0	.20		0	.01					
4		---	6.0	.10		0	.01					
5		---	7.0	.05		0	.01					
6		---	8.0	.04		0	.01					
7		---	9.0	.03		0	.01					
8		---	10	.03		0	.01					
9		---	11	.02		.01	.01					
10		---	12	.02		.01	.01					
11		---	12	.01		.01	.01					
12		---	12	.01		.01	.01					
13		---	12	.01		.01	.01					
14		---	12	.01		.01	.01					
15		---	13	.01		.01	.01					
16		---	13	.01		.01	.01					
17		---	11	.01		.01	.01					
18		---	8.4	.01		.01	.01					
19		---	6.3	.01		.01	.01					
20		---	4.2	.01		.01	.01					
21		---	4.1	.01		.01	.01					
22		---	4.0	.01		.01	.01					
23		---	3.0	.01		.01	.01					
24		0	2.0	0		.01	.01					
25		0	1.0	0		.01	.01					
26		3.0	1.1	0		.01	.01					
27		4.7	1.2	0		.01	.01					
28		4.8	1.4	0		.01	.01					
29		4.9	1.5	0		.01	.01					
30		---	1.3	0		.01	.01					
31		---	1.0	---		---	.01		---			
TOTAL	---	---	203.5	1.72	0	.22	.31	0	0	0		
MEAN	---	---	6.56	.057	0	.007	.010	0	0	0		
MAX	---	---	13	.70	0	.01	.01	0	0	0		
MIN	---	---	1.0	0	0	0	.01	0	0	0		
AC-FT	---	---	404	3.4	0	.4	.6	0	0	0		

THE SEASON MARCH TO OCTOBER AC-FT 408

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

06149000 CYPRESS LAKE WEST OUTFLOW CANAL NEAR WEST PLAINS, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°28'12", long 109°35'18", in SW¼ sec.16, T.6, R.27 W., third meridian, Hydrologic Unit 10050008, on left bank 1.1 mi (1.8 km) downstream from Cypress Lake West Dam, 6 mi (10 km) northeast of West Plains, and 12.6 mi (20.3 km) north of Consul.

PERIOD OF RECORD.--March 1940 to current season (seasonal records only). Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Altitude of gage is 3,180 ft (969 m), from topographic map. Prior to Sept. 18, 1952, at site 1 mi (2 km) upstream and 300 ft (91 m) downstream from Cypress Lake West Dam at different datum.

REMARKS.--Records good. Canal diverts water from Cypress Lake in NW¼ sec.15, T.6, R.27 W., third meridian, for irrigation of 5,500 acres (22.3 km²) in Battle Creek basin in Saskatchewan. Water may be delivered to Battle Creek or diverted into Vidora Ditch at gate structure near lower end of canal.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 304 ft³/s (8.61 m³/s) May 4, 1951; no flow at times each season.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			0	.25	.24	23	.13	40	.02	.02		
2			0	3.0	.23	14	.14	37	.02	.02		
3			0	10	.18	8.1	.16	26	.01	.01		
4			0	15	.18	5.6	.14	27	.01	.01		
5			0	19	.17	3.4	.13	25	.01	.01		
6			0	18	.18	3.3	.11	12	0	.01		
7			0	18	.18	4.4	.12	.43	.02	.01		
8			0	18	.15	8.1	.12	.27	.02	.02		
9			0	15	.15	8.0	.10	.20	.02	.02		
10			0	10	.12	7.6	.09	.18	.02	.03		
11			0	5.0	.09	7.3	.08	.19	.02	.03		
12			0	2.3	.08	7.3	.10	.21	.02	.03		
13			0	2.2	3.7	6.7	.09	.20	.02	.04		
14			0	2.1	7.9	6.1	8.0	.17	.02	.04		
15			0	4.2	2.0	4.7	16	.16	.02	.02		
16			0	9.8	24	2.4	17	.16	.02	.02		
17			0	9.3	123	1.9	17	.11	.01	.03		
18			0	6.5	164	.56	17	.09	.01	.05		
19			0	.31	164	.33	79	.09	.01	.08		
20			0	.29	163	.25	134	.08	.01	.13		
21			12	.24	163	.25	158	.07	.01	.15		
22			8.6	.29	163	.32	161	.06	.01	.17		
23			10	.29	163	.28	160	.05	.01	.16		
24			12	.26	161	.19	159	.05	.02	.17		
25			15	.20	161	.21	158	.04	.03	.18		
26			14	.19	160	.20	148	.03	.03	.20		
27			10	.18	162	.17	132	.03	.02	.20		
28			5.0	.20	163	.17	114	.02	.02	.20		
29			.25	.21	160	.16	100	.02	.02	.20		
30			.25	.21	113	.14	84	.03	.02	.20		
31			.25	---	62	---	75	.03	---	.20		
TOTAL			87.35	170.52	2284.55	125.13	1738.51	169.97	.50	2.66		
MEAN			2.82	5.68	73.7	4.17	56.1	5.48	.017	.086		
MAX			15	19	164	23	161	40	.03	.20		
MIN			0	.18	.08	.14	.08	.02	0	.01		
AC-FT			173	338	4530	248	3450	337	1.0	5.3		

THE SEASON MARCH TO OCTOBER AC-FT 9,080

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

06149100 VIDORA DITCH NEAR CONSUL, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°27'20", long 109°35'20", in SW¼ sec.9, T.6, R.27 W., third meridian, Hydrologic Unit 10050008, on left bank 0.5 mi (0.8 km) downstream from headgate near lower end of Cypress Lake west outflow canal and 11.7 mi (18.8 km) north of Consul.

PERIOD OF RECORD.--March 1963 to current season. March 1952 to current season in reports of Department of the Environment, Canada. Seasonal records only.

GAGE.--Water-stage recorder. Altitude of gage is 3,200 ft (975 m), from topographic map. Prior to Aug. 1, 1963, at datum 1.0 ft (0.31 m) higher.

REMARKS.--Records fair. Water may be delivered either to this canal or returned to Battle Creek from Cypress Lake. Canal diverts water from Cypress Lake west outflow canal in NE¼ sec.8, T.6, R.27 W., third meridian, for irrigation of about 2,140 acres (8.66 km²) in the Battle Creek basin.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 97 ft³/s (2.75 m³/s) June 12, 13, 1975; no flow at times each season.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1					0		0	24				
2					0		0	24				
3					0		0	19				
4					0		0	23				
5					0		0	22				
6					0		0	9.0				
7					0		0	0				
8					0		0	0				
9					0		0	0				
10					0		0	0				
11					0		0	0				
12					0		0	0				
13					0		0	0				
14					0		0	0				
15					0		0	0				
16					0		0	0				
17					32		0	0				
18					60		0	0				
19					62		28	0				
20					63		55	0				
21					63		56	0				
22					63		55	0				
23					61		57	0				
24					63		57	0				
25					65		57	0				
26					66		55	0				
27					51		51	0				
28					40		48	0				
29					30		46	0				
30					.78		50	0				
31				---	.29	---	54	0	---			
TOTAL	---		0	0	720.07	0	669	121.0	0	0		
MEAN	---		0	0	23.2	0	21.6	3.90	0	0		
MAX	---		0	0	66	0	57	24	0	0		
MIN	---		0	0	0	0	0	0	0	0		
AC-FT	---		0	0	1430	0	1330	240	0	0		

THE SEASON MARCH TO OCTOBER AC-FT 3,000

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

06149200 RICHARDSON DITCH NEAR CONSUL, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°21'49", long 109°32'14", near center of south line of sec.11, T.5, R.27 W., third meridian, Hydrologic Unit 10050008, on left bank 420 ft (128 m) downstream from headgate and 4.8 mi (7.7 km) north of Consul.

PERIOD OF RECORD.--March 1963 to current season. 1910-12, 1914, 1916-20, 1922-33, 1935, July 1946 to current season in reports of Department of the Environment, Canada. Seasonal records only. Estimates of seasonal diversion only in most seasons prior to 1946.

GAGE.--Water-stage recorder. Prior to June 26, 1949, nonrecording gages at different sites and datums. June 26, 1949, to Aug. 28, 1963, water-stage recorder at present site at datum 1.00 ft (0.305 m) higher.

REMARKS.--Records fair except those for periods of no gage-height record for discharges below 0.20 ft^3/s (0.006 m^3/s) prior to July 20 and Sept. 22 to Oct. 31, which are poor. Ditch diverts from left bank of Battle Creek in SW¼ sec.11, T.5, R.27 W., third meridian, for irrigation of about 1,330 acres (5.38 km^2) along Battle Creek.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 72 ft^3/s (2.04 m^3/s) June 15, 1974; no flow at times each season.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1					0	.20	0	25	.05	.05		
2					0	.18	0	17	.05	.05		
3					0	.16	0	3.1	.05	.05		
4					0	.14	0	.26	.05	.05		
5					0	.12	0	.21	.05	.05		
6					0	.10	0	.05	.05	.05		
7					0	.09	0	.05	.05	.05		
8					0	.08	0	.03	.05	.05		
9					0	.08	0	.01	.05	.05		
10					0	.07	0	0	.05	.05		
11					0	.07	0	0	.05	.05		
12					0	.06	0	0	.05	.05		
13					0	.06	0	0	.05	.05		
14					0	.05	0	0	.05	.05		
15					0	.05	0	0	.05	.05		
16					0	.05	0	0	.05	.05		
17					40	.04	0	0	.05	.05		
18					50	.04	0	0	.05	.05		
19					50	.04	0	0	.05	.05		
20					50	.03	0	0	.05	.05		
21					49	.03	34	0	.05	.05		
22					49	.03	43	0	.05	.05		
23					48	.02	42	.04	.05	.05		
24					49	.02	38	.01	.05	.05		
25					50	.02	36	0	.05	.05		
26					49	.02	36	0	.05	.05		
27					50	.01	35	0	.05	.05		
28					41	.01	34	0	.05	.05		
29					27	.01	33	.05	.05	.05		
30					17	.01	32	.05	.05	.05		
31				---	2.7	---	28	.05	---	.05		
TOTAL			0	0	621.7	1.89	391	45.91	1.50	1.55		
MEAN			0	0	20.1	.063	12.6	1.48	.050	.050		
MAX			0	0	50	.20	43	25	.05	.05		
MIN			0	0	0	.01	0	0	.05	.05		
AC-FT			0	0	1230	3.7	776	91	3.0	3.1		

THE SEASON MARCH TO OCTOBER AC-FT 2,110

NOTE.--No gage-height record for discharges below 0.20 ft^2/s prior to July 20 and Sept. 22 to Oct. 31. Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

06149300 MCKINNON DITCH NEAR CONSUL, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°19'47", long 109°29'24", in NW¼ sec.30, T.4, R.26 W., third meridian, Hydrologic Unit 10050008, on right bank 1.0 mi (1.6 km) downstream from headgate on Battle Creek and 2.7 mi (4.3 km) northeast of Consul.

PERIOD OF RECORD.--March 1963 to current season. 1911-26, 1929-31, and March 1938 to current season in reports of Department of the Environment, Canada. Seasonal records only. Estimates of seasonal diversion only in many years prior to 1947.

GAGE.--Water-stage recorder. Prior to September 1949, nonrecording gages at various sites and datums. Sept. 4, 1949, to Aug. 29, 1963, water-stage recorder at present site at datum 1.00 ft (0.305 m) higher.

REMARKS.--Records poor. Ditch diverts from the right bank of Battle Creek in NE¼ sec.30, T.4, R.26 W., third meridian, for irrigation of about 1,320 acres (5.34 km^2) along Battle Creek.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 68 ft^3/s (1.93 m^3/s) June 18, 1975; no flow most of each season.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1					0	17	0	.10				
2					0	19	0	.01				
3					0	22	0	0				
4					0	20	0	0				
5					0	19	0	.04				
6					0	13	0	.01				
7					0	9.7	0	.04				
8					0	4.4	0	0				
9					0	1.2	0	.01				
10					0	.33	0	.02				
11					0	.33	0	.02				
12					0	.10	0	.01				
13					0	0	0	.02				
14					0	.17	0	.03				
15					0	.01	0	.06				
16					0	.01	0	.04				
17					0	.01	0	0				
18					23	0	0	0				
19					39	0	0	0				
20					42	0	26	0				
21					43	0	38	0				
22					44	0	38	0				
23					44	0	40	0				
24					45	0	41	0				
25					46	0	42	0				
26					45	0	42	0				
27					44	0	42	0				
28					30	0	32	0				
29					25	0	28	0				
30					20	0	11	0				
31				---	15	---	.42	0	---			
TOTAL	---		0	0	505	126.26	380.42	.41	0	0		
MEAN	---		0	0	16.3	4.21	12.3	.013	0	0		
MAX	---		0	0	46	22	42	.10	0	0		
MIN	---		0	0	0	0	0	0	0	0		
AC-FT	---		0	0	1000	250	755	.8	0	0		

THE SEASON MARCH TO OCTOBER AC-FT 2,010

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

06149400 NASHLYN CANAL NEAR CONSUL, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°13'57", long 109°33'27", in NE¼ sec.22, T.3, T.27 W., third meridian, Hydrologic Unit 10050008, on left bank 0.8 mi (1.3 km) downstream from headgate on Battle Creek, 5.9 mi (9.5 km) south of Consul.

PERIOD OF RECORD.--March 1963 to current season. 1912, 1914-35, 1938 to current season in reports of Department of the Environment, Canada. Seasonal records only. Prior to March 1950, estimates of seasonal diversion only in many seasons. Prior to Mar. 1, 1971, published as "Stirling and Nash Ditch".

GAGE.--Water-stage recorder. Prior to Sept. 21, 1949, water-stage recorder at present site or nonrecording gages at site 0.5 mi (0.8 km) downstream at different datums.

REMARKS.--Records good. Ditch diverts water from left bank of Battle Creek in SW¼ sec.27, T.3, R.27 W., third meridian, for irrigation of about 1,880 acres (7.65 km²) along Battle Creek.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 85 ft³/s (2.41 m³/s) Apr. 14, 1952; no flow at times each season.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			0	22	.01	.07	0	.14				
2			0	26	0	.03	0	.06				
3			0	26	0	0	0	0				
4			0	31	.01	.01	0	0				
5			0	30	.01	.01	0	0				
6			0	29	0	0	0	0				
7			0	28	0	.01	0	0				
8			0	25	0	0	0	0				
9			0	24	0	0	0	0				
10			0	27	0	0	0	0				
11			0	26	2.0	0	0	0				
12			0	27	15	0	0	0				
13			0	27	15	0	0	0				
14			0	28	15	0	0	0				
15			0	29	16	0	1.2	0				
16			0	4.9	17	0	15	0				
17			1.7	.26	18	0	26	0				
18			4.9	.16	26	0	27	0				
19			6.0	.11	27	0	29	0				
20			7.1	.07	27	0	30	0				
21			8.3	.10	27	0	29	0				
22			9.4	.08	14	0	23	0				
23			12	.08	.79	0	10	0				
24			23	.07	.25	0	6.9	0				
25			25	.07	.10	0	14	0				
26			15	.04	.06	0	14	0				
27			9.2	.01	.01	0	8.7	0				
28			12	.01	0	0	.49	0				
29			13	.01	0	0	.27	0				
30			12	.01	0	0	.36	0				
31			11	---	.08	---	.22	0	---			
TOTAL			169.6	410.98	220.32	.13	235.14	.20	0	0		
MEAN			5.47	13.7	7.11	.004	7.59	.007	0	0		
MAX			25	31	27	.07	30	.14	0	0		
MIN			0	.01	0	0	0	0	0	0		
AC-FT			336	815	437	.3	466	.4	0	0		

THE SEASON MARCH TO OCTOBER AC-FT 2,060

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

06149500 BATTLE CREEK AT INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 49°00'08", long 109°25'20", in SE¼ sec.4, T.1, R.26 W., third meridian, Hydrologic Unit 10050008, on left bank 600 ft (183 m) north of international boundary in Saskatchewan, 8 mi (13 km) upstream from Woodpile Coulee, and 30 mi (48 km) north of Chinook, Mt.

DRAINAGE AREA.--931 mi^2 (2,411 km^2).

PERIOD OF RECORD.--April 1917 to current season (seasonal records only most seasons). Monthly discharge only for March 1918 and March 1928, published in WSP 1309.

REVISED RECORDS.--WSP 1389: 1935(M), 1936, 1937-38(M). WSP 1729: 1924, 1926, 1932 (monthly figures only), drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,729.8 ft (832.04 m) above mean sea level (International Boundary Survey datum, adjustment of 1928).

REMARKS.--Records fair. Natural flow of stream affected by storage reservoirs, diversions for irrigation of about 9,500 acres (38.4 km^2), and return flow from irrigated areas. Water may be diverted into or from Frenchman River basin through Cypress Lake.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,820 ft^3/s (165 m^3/s) Apr. 15, 1952, gage height, 10.56 ft (3.219 m), reduced by overflow into Lodge Creek basin; no flow at times most season.

EXTREMES FOR CURRENT SEASON.--Maximum discharge, 750 ft^3/s (21.2 m^3/s) Mar. 20, gage height, 7.51 ft (2.289 m), backwater from ice; maximum gage height, 8.02 ft (2.444 m) Mar. 20 (backwater from ice); no flow Sept. 23 to Oct. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			17	93	23	121	11	26	1.8	0	11	
2			17	62	25	135	8.5	24	1.1	0	11	
3			17	95	24	66	7.1	20	.86	0	---	
4			17	89	22	42	6.4	15	.75	0	---	
5			17	133	20	47	4.7	16	.64	0	---	
6			16	84	19	66	5.2	18	.56	0	---	
7			16	73	18	57	6.8	20	.58	0	---	
8			16	133	18	57	6.2	19	.55	0	---	
9			16	80	18	79	6.2	16	.52	0	---	
10			16	74	17	67	5.7	13	.46	0	---	
11			16	53	16	57	4.7	11	.39	3.4	---	
12			16	34	16	64	4.1	8.1	.28	9.2	---	
13			16	37	14	41	4.1	6.3	.18	7.0	---	
14			16	35	9.2	33	5.0	4.2	.10	5.8	---	
15			18	41	5.1	26	7.7	2.9	.08	6.2	---	
16			20	64	3.7	23	8.9	3.2	.06	7.4	---	
17			153	69	2.4	21	8.3	4.7	.06	8.2	---	
18			337	73	1.4	19	6.9	4.9	.04	8.2	---	
19			620	69	7.4	17	3.9	4.6	.04	7.8	---	
20			719	67	9.7	14	2.4	6.5	.04	7.8	---	
21			547	51	12	12	1.7	6.8	.02	7.4	---	
22			261	38	18	12	1.5	7.6	.02	7.4	---	
23			231	32	18	10	2.9	8.4	0	7.4	---	
24			165	43	28	12	1.8	9.0	0	9.2	---	
25			130	46	38	16	6.6	8.1	0	9.7	---	
26			93	35	42	20	5.4	6.5	0	11	---	
27			149	29	47	17	3.8	5.6	0	9.7	---	
28			151	22	47	18	2.3	5.7	0	11	---	
29			127	19	38	20	28	4.7	0	12	---	
30			144	18	53	15	30	4.4	0	12	---	
31			121	---	86	---	30	3.2	---	11	---	
TOTAL			4215	1791	715.9	1204	237.8	313.4	9.13	178.8	---	
MEAN			136	59.7	23.1	40.1	7.67	10.1	.30	5.77	---	
MAX			719	133	86	135	30	26	1.8	12	---	
MIN			16	18	1.4	10	1.5	2.9	0	0	---	
AC-FT			8360	3550	1420	2390	472	622	18	355	---	

THE SEASON MARCH TO OCTOBER AC-FT 17,190

06150000 WOODPILE COULEE NEAR INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 48°59'00", long 109°31'50", in NW¼ sec.8, T.37 N., R.17 E., Hill County, Hydrologic Unit 10050008, on right bank 600 ft (183 m) downstream from Antelope Coulee, 1.3 mi (2.1 km) south of international boundary, 7 mi (11 km) upstream from mouth, and 30 mi (48 km) north of Havre, Mt.

DRAINAGE AREA.--60.2 mi^2 (156 km^2).

PERIOD OF RECORD.--March 1927 to October 1976 (discontinued). Seasonal records only in most seasons. Monthly discharge only for May 1951, published in WSP 1729.

REVISED RECORDS.--WSP 1209: 1943(M). WSP 1389: 1935(M), 1936, 1937(M), 1939, 1940-41(M), 1943-44, 1947, 1950(M). WSP 1729: 1951, drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 2,740 ft (835 m), from topographic map. Prior to Aug. 27, 1927, nonrecording gage at site 4 mi (6 km) downstream at different datum.

REMARKS.--Records good. Numerous stock water dams above station.

COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,090 ft^3/s (87.5 m^3/s) Mar. 30, 1943, gage height, 8.6 ft (2.62 m), from floodmark, from rating curve extended above 330 ft^3/s (9.35 m^3/s) on basis of slope-area measurement at gage height, 8.50 ft (2.591 m); no flow most of each season.

EXTREMES FOR CURRENT SEASON.--Maximum discharge, 1,160 ft^3/s (32.9 m^3/s) Mar. 19, gage height, 6.91 ft (2.106 m); no flow most of season.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			0	.75							0	
2			0	.59							0	
3			0	.49							---	
4			0	.46							---	
5			0	.40							---	
6			.05	.37							---	
7			.10	.31							---	
8			.10	.28							---	
9			.10	.28							---	
10			.15	.28							---	
11			.10	.23							---	
12			.50	.20							---	
13			.75	.23							---	
14			.75	.18							---	
15			1.0	.15							---	
16			3.0	.15							---	
17			53	.13							---	
18			294	.08							---	
19			489	.05							---	
20			143	.03							---	
21			56	.03							---	
22			37	.03							---	
23			28	.03							---	
24			12	.03							---	
25			10	.03							---	
26			8.4	.03							---	
27			4.8	.03							---	
28			2.6	0							---	
29			1.8	0							---	
30			1.3	0							---	
31			1.0	---		---			---		---	
TOTAL	---		1148.50	5.85	0	0	0	0	0	0	---	
MEAN	---		37.0	.20	0	0	0	0	0	0	---	
MAX	---		489	.75	0	0	0	0	0	0	---	
MIN	---		0	0	0	0	0	0	0	0	---	
AC-FT	---		2280	12	0	0	0	0	0	0	---	

THE SEASON MARCH TO OCTOBER AC-FT 2,290

06150500 EAST FORK BATTLE CREEK NEAR INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 48°58'18", long 109°07'45", in NW¼ sec.17, T.37 N., R.20 E., Blaine County, Hydrologic Unit 10050008, on right bank 2 mi (3 km) south of international boundary, 5.5 mi (8.8 km) upstream from Lyons Creek, and 26 mi (42 km) north of Chinook, Mt.

DRAINAGE AREA.--89.5 mi^2 (232 km^2).

PERIOD OF RECORD.--March 1927 to October 1976 (discontinued). Seasonal records only in most seasons. Monthly discharge only for June, July 1931, published in WSP 1309.

REVISED RECORDS.--WSP 1176: 1939-40. WSP 1389: 1927, 1937(M), 1941(M), 1943-44. WSP 1729: 1927 (mean and acre feet), 1957(M), drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 2,760 ft (841 m), from topographic map. Prior to Sept. 3, 1927, nonrecording gage at site 0.5 mi (0.8 km) downstream at different datum. Sept. 3, 1927, to Oct. 18, 1952, water-stage recorder at site 300 ft (91 m) downstream from former gage at different datum.

REMARKS.--Records fair. Numerous stock-water dams above station.

COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,300 ft^3/s (65.1 m^3/s) July 12, 1955, gage height, 11.24 ft (3.426 m), from rating curve extended above 230 ft^3/s (6.51 m^3/s) on basis of slope-area measurement made in 1952 at former site converted to present site and datum; no flow most of each season.

EXTREMES FOR CURRENT SEASON.--Maximum discharge, 930 ft^3/s (26.3 m^3/s) Mar. 18, gage height, 7.97 ft (2.429 m); no flow most of season.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			0	.18							0	
2			0	.12							0	
3			0	.08							---	
4			0	.04							---	
5			0	0							---	
6			0	0							---	
7			1.0	0							---	
8			2.0	0							---	
9			1.0	0							---	
10			0	0							---	
11			0	0							---	
12			.52	0							---	
13			1.0	0							---	
14			.52	0							---	
15			1.1	0							---	
16			2.0	0							---	
17			46	0							---	
18			474	0							---	
19			297	0							---	
20			64	0							---	
21			22	0							---	
22			12	0							---	
23			13	0							---	
24			6.3	0							---	
25			4.0	0							---	
26			3.0	0							---	
27			1.8	0							---	
28			1.1	0							---	
29			.55	0							---	
30			.38	0							---	
31			.27	---		---			---		---	
TOTAL	---		954.54	.42	0	0	0	0	0	0	---	
MEAN	---		30.8	.014	0	0	0	0	0	0	---	
MAX	---		474	.18	0	0	0	0	0	0	---	
MIN	---		0	0	0	0	0	0	0	0	---	
AC-FT	---		1890	.8	0	0	0	0	0	0	---	

THE SEASON MARCH TO OCTOBER AC-FT 1,890

06151000 LYONS CREEK AT INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 49°00'20", long 109°13'50", in SW¼ sec.1, T.1, R.25 W., third meridian, Hydrologic Unit 10050008, on right bank 0.3 mi (0.5 km) north of international boundary, 8 mi (13 km) south of Arena, Saskatchewan, and 28 mi (45 km) north of Chinook, Mt.

DRAINAGE AREA.--66.7 mi^2 (173 km^2).

PERIOD OF RECORD.--March 1927 to current season (seasonal records only in most seasons). Monthly discharge only for February, March 1934, published in WSP 1309. Prior to March 1962, published as Lyons Coulee at international boundary.

REVISED RECORDS.--WSP 1389: 1929(M), 1936, 1937(M), 1939, 1940-41(M), 1946(M). WSP 1629: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 2,800 ft (853 m), from international boundary map. Prior to Oct. 19, 1935, nonrecording gages at site 0.5 mi (0.8 km) south of international boundary at different datum. Oct. 19, 1935, to Oct. 31, 1940, nonrecording gage at site 1.2 mi (1.9 km) north of international boundary at different datum. Nov. 1, 1940, to Aug. 4, 1958, nonrecording gages at sites within 300 ft (91 m) of present site at present datum.

REMARKS.--Records fair. Natural flow of stream affected by small stock-water and irrigation dams above station.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,200 ft^3/s (34.0 m^3/s) July 6, 1955, gage height, 8.38 ft (2.554 m), from floodmark, from rating curve extended above 600 ft^3/s (17.0 m^3/s); no flow most of each season.

EXTREMES FOR CURRENT SEASON.--Maximum discharge, 201 ft^3/s (5.69 m^3/s) Mar. 19, gage height, 4.35 ft (1.326 m), from floodmark (backwater from ice); no flow most of season.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			0	1.7	.01						0	
2			0	1.1	0						0	
3			0	.83	0						---	
4			0	.71	0						---	
5			0	.54	0						---	
6			0	.44	0						---	
7			0	.38	0						---	
8			0	.32	0						---	
9			0	.26	0						---	
10			0	.20	0						---	
11			0	.14	0						---	
12			0	.14	0						---	
13			0	.11	0						---	
14			0	.11	0						---	
15			0	.10	0						---	
16			2.0	.08	0						---	
17			25	5.9	0						---	
18			90	2.8	0						---	
19			130	.71	0						---	
20			105	.32	0						---	
21			92	.20	0						---	
22			46	.14	0						---	
23			23	.11	0						---	
24			32	.09	0						---	
25			29	.07	0						---	
26			29	.06	0						---	
27			27	.03	0						---	
28			13	.02	0						---	
29			6.3	.01	0						---	
30			4.0	.01	0						---	
31			2.5	---	0	---			---		---	
TOTAL	---		655.8	17.63	.01	0	0	0	0	0	---	
MEAN	---		21.2	.59	.0003	0	0	0	0	0	---	
MAX	---		130	5.9	.01	0	0	0	0	0	---	
MIN	---		0	.01	0	0	0	0	0	0	---	
AC-FT	---		1300	35	.02	0	0	0	0	0	---	

THE SEASON MARCH TO OCTOBER AC-FT 1,340

06154400 PEOPLES CREEK NEAR HAYS, MT

LOCATION.--Lat 48°13'35", long 108°42'40", in SW¼ sec.35, T.29 N., R.23 E., Blaine County, Hydrologic Unit 10050009, on right bank 45 ft (14 m) downstream from bridge on State Highway 376, 2.5 mi (4.0 km) downstream from Myrtle Creek, and 16.4 mi (26.4 km) north of Hays.

DRAINAGE AREA.--220 mi^2 (570 km^2).

PERIOD OF RECORD.--December 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,714.10 ft (827.258 m) above mean sea level.

REMARKS.--Records fair except those for winter period, which are poor. Some storage in numerous stock ponds and diversions for irrigation of about 1,300 acres (5.26 km^2) above station.

AVERAGE DISCHARGE.--9 years, 18.4 ft^3/s (0.521 m^3/s), 13,330 acre-ft/yr (16.4 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,460 ft^3/s (240 m^3/s) June 8, 1972, gage height, 15.03 ft (4.581 m), from floodmark, from rating curve extended above 130 ft^3/s (3.68 m^3/s) on basis of slope-area measurement of peak flow; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 83 ft^3/s (2.35 m^3/s) Mar. 20, gage height, 4.23 ft (1.289 m); no peak above base of 100 ft^3/s (2.83 m^3/s); maximum gage height, 5.42 ft (1.652 m) Jan. 16 (backwater from ice); no flow for part of each day Aug. 26, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	15	11	9.0	21	10	13	7.8	1.4	1.2	.21	.09
2	15	15	11	8.0	19	9.0	16	7.0	2.0	1.1	.18	.06
3	16	14	12	8.0	18	8.0	17	6.8	2.9	1.0	.18	.09
4	14	13	12	8.0	16	8.0	14	6.6	1.9	.63	.15	.09
5	14	13	13	8.0	15	9.0	13	5.2	1.5	.43	.15	.09
6	13	13	12	7.5	17	12	13	3.2	1.3	.30	.15	.09
7	14	13	12	7.5	20	15	14	2.5	2.1	.37	.12	.09
8	15	13	12	7.0	20	13	15	1.9	3.7	.21	.12	.09
9	17	13	12	6.5	20	12	15	1.6	2.9	.21	.12	.06
10	17	14	12	7.0	20	12	15	1.4	1.8	.21	.09	.06
11	17	16	11	7.5	19	14	14	2.1	1.8	2.2	.12	.09
12	17	16	10	7.5	18	16	13	2.7	2.0	1.5	.12	.06
13	19	15	9.0	8.0	19	17	12	1.9	2.1	.82	.12	.09
14	21	15	8.0	8.2	17	18	11	2.0	3.0	.50	.15	.09
15	23	14	8.0	9.0	15	20	11	2.5	8.5	.30	.18	.09
16	24	14	8.5	10	14	22	11	2.0	7.8	.24	.09	.09
17	24	14	8.8	11	13	26	10	1.7	6.8	.37	.09	.12
18	23	14	9.0	13	13	33	10	1.3	6.8	.24	.12	.09
19	19	13	9.0	15	13	54	9.8	1.5	4.6	.27	.12	.15
20	17	13	9.0	17	13	59	9.6	1.8	3.3	.27	.06	.15
21	17	12	10	18	13	40	8.8	2.2	3.5	.24	.06	.15
22	16	12	10	20	12	25	8.8	2.2	9.6	.15	.09	.18
23	17	12	10	20	13	21	9.0	1.6	6.0	.15	.09	.18
24	16	12	10	19	14	19	9.0	1.5	5.2	.12	.09	.18
25	16	12	10	18	15	18	8.5	1.6	3.9	.15	.09	.21
26	16	12	10	17	16	15	9.0	2.0	3.5	.12	.06	.21
27	15	11	10	20	18	15	8.5	1.6	3.0	.12	.03	.21
28	15	11	10	22	15	15	8.0	1.7	2.6	.12	.06	.24
29	16	11	10	23	11	14	7.8	1.4	2.0	.18	.09	.21
30	15	10	10	23	---	12	8.3	1.2	1.6	.21	.09	.21
31	15	---	10	22	---	12	---	1.5	---	.15	.09	---
TOTAL	528	395	319.3	404.7	467	593.0	342.1	82.0	109.7	14.08	3.48	3.81
MEAN	17.0	13.2	10.3	13.1	16.1	19.1	11.4	2.65	3.66	.45	.11	.13
MAX	24	16	13	23	21	59	17	7.8	9.6	2.2	.21	.24
MIN	13	10	8.0	6.5	11	8.0	7.8	1.2	1.3	.12	.03	.06
AC-FT	1050	783	633	803	926	1180	679	163	218	28	6.9	7.6

CAL YR 1975 TOTAL 15206.80 MEAN 41.7 MAX 657 MIN 1.5 AC-FT 30160
WTR YR 1976 TOTAL 3262.17 MEAN 8.91 MAX 59 MIN .03 AC-FT 6470

06154410 LITTLE PEOPLES CREEK NEAR HAYS, MT

LOCATION.--Lat 47°57'59", long 108°39'37", in SE¼SE¼NW¼ sec.32, T.26 N., R.24 E., Blaine County, Hydrologic Unit 10050009, on right bank 0.5 mi (0.8 km) upstream from entrance to Mission Canyon, and 2 mi (3 km) southeast of Hays.

DRAINAGE AREA.--11.8 mi^2 (30.6 km^2).

PERIOD OF RECORD.--August 1972 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,750 ft (1,143 m), from topographic map.

REMARKS.--Records fair. No regulation or diversion above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 576 ft^3/s (16.3 m^3/s) May 25, 1974, gage height, 4.57 ft (1.393 m), from floodmark, from rating curve extended above 44 ft^3/s (1.25 m^3/s) on basis of slope-area measurement of peak flow; minimum daily, 1.6 ft^3/s (0.045 m^3/s) Mar. 8-22, Mar. 25 to Apr. 3, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7.0 ft^3/s (0.20 m^3/s) July 7, gage height, 10.29 ft (3.136 m), no peak above base of 50 ft^3/s (1.42 m^3/s); minimum daily, 1.7 ft^3/s (0.048 m^3/s) Sept. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	3.4	2.7	4.0	3.3	3.3	4.0	3.8	4.5	4.3	3.4	2.4
2	4.0	3.4	2.7	4.0	3.0	3.2	4.0	3.8	4.5	4.4	3.4	2.4
3	3.5	3.4	2.7	4.2	2.9	3.7	4.0	3.8	4.2	4.4	3.4	2.3
4	3.4	3.7	2.8	4.3	2.9	3.5	4.0	3.7	4.0	4.3	3.4	2.3
5	3.4	3.7	2.8	4.5	2.5	3.2	4.0	3.7	4.4	4.1	3.4	2.2
6	3.4	3.7	2.8	3.4	2.5	3.2	4.0	3.7	4.4	4.1	3.2	2.1
7	3.4	3.7	2.9	4.2	2.7	3.2	4.0	3.8	3.2	4.4	3.2	2.1
8	3.4	3.5	2.9	4.5	2.7	3.2	3.9	3.8	4.9	4.4	3.2	2.1
9	3.4	3.5	2.9	4.5	2.7	3.2	3.9	3.8	4.7	4.3	3.1	2.0
10	3.7	3.3	2.9	4.2	2.8	3.2	3.9	3.8	4.5	4.1	3.1	2.0
11	3.5	3.3	2.9	4.0	2.3	3.3	3.9	3.5	4.5	4.1	3.1	1.9
12	3.5	3.3	2.9	3.3	2.3	3.0	3.7	3.5	4.2	4.1	3.0	1.9
13	3.5	3.3	2.9	3.2	2.3	3.0	3.9	3.5	4.0	4.1	2.9	1.9
14	3.5	3.3	2.7	3.2	2.8	3.2	3.9	3.5	4.9	4.1	2.9	1.9
15	3.3	3.3	3.0	3.2	2.8	3.3	3.9	3.5	4.2	4.1	2.8	1.8
16	3.3	3.3	2.9	3.2	3.0	3.3	3.9	3.7	4.0	4.0	2.8	1.9
17	3.2	3.3	3.2	3.2	3.0	3.5	3.9	4.0	4.0	3.8	2.8	1.8
18	3.2	3.3	3.2	3.2	3.0	3.9	3.9	3.9	4.2	3.7	2.8	1.8
19	3.3	3.3	4.4	3.5	3.0	3.9	3.9	3.9	4.2	3.7	2.6	1.8
20	3.9	3.3	3.9	3.2	3.2	3.7	3.9	3.9	4.2	3.7	2.8	1.8
21	4.0	3.3	3.5	3.2	3.2	3.7	4.0	4.2	4.0	3.7	2.8	1.8
22	4.0	3.3	3.3	3.2	3.2	3.7	4.2	4.3	4.3	3.7	2.5	1.8
23	3.9	3.2	3.9	3.7	3.2	3.7	4.2	4.2	4.0	3.7	2.5	1.8
24	3.9	3.2	3.5	3.9	3.2	3.7	4.2	3.2	4.0	3.7	2.5	1.8
25	3.9	3.2	3.7	3.9	3.2	3.7	4.0	3.9	4.3	3.7	2.5	1.9
26	3.9	3.2	4.5	4.0	3.2	3.9	4.0	3.9	4.3	3.7	2.5	1.9
27	3.9	3.0	4.2	4.0	3.2	3.9	4.0	3.9	4.3	3.7	2.4	1.9
28	3.9	3.0	3.7	4.2	3.3	3.7	3.9	4.4	4.3	3.5	2.4	1.9
29	3.7	3.0	4.4	3.9	3.3	3.7	3.9	4.4	4.3	3.5	2.4	2.1
30	3.7	2.7	4.5	3.7	---	3.9	3.9	4.4	4.3	3.5	2.4	2.1
31	3.7	---	3.9	3.9	---	3.9	---	4.7	---	3.5	2.4	---
TOTAL	115.7	106.9	105.4	114.0	85.2	105.5	116.8	127.5	129.5	122.1	87.9	59.3
MEAN	3.73	3.56	3.34	3.68	2.97	3.50	3.90	4.11	4.32	3.94	2.84	1.98
MAX	4.0	3.9	4.5	3.4	3.3	3.9	4.2	3.9	5.2	4.4	3.4	2.4
MIN	3.2	2.7	2.7	3.2	2.3	3.0	3.7	3.5	4.0	3.5	2.4	1.8
AC-FT	229	200	205	233	171	215	236	253	257	242	174	118

CAL YR 1975 TOTAL 3561.7 MEAN 9.76 MAX 211 MIN 2.3 AC-FT 7060
WTR YR 1976 TOTAL 1278.8 MEAN 3.49 MAX 5.9 MIN 1.8 AC-FT 2540

06156000 WHITEWATER CREEK NEAR INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 48°57'10", long 107°51'40", in NW¼ sec.24, T.37 N., R.29 E., Phillips County, Hydrologic Unit 10050011, on left bank 500 ft (152 m) downstream from North Fork, 3.3 mi (5.3 km) south of international boundary, 11 mi (18 km) north of Loring, Mt. and 14 mi (23 km) south of Orkney, Saskatchewan.

DRAINAGE AREA.--458 mi^2 (1,186 km^2).

PERIOD OF RECORD.--March 1927 to current season (seasonal records only in most seasons).

REVISED RECORDS.--WSP 1389: 1928, 1931(M), 1936, 1939-41(M), 1943, 1950(M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. V-Notch sharp-crested weir in concrete control since October 1938. Altitude of gage is 2,500 ft (762 m), from international boundary map. Prior to Aug. 31, 1927, nonrecording gage, and Aug. 31, 1927, to Aug. 31, 1948, water-stage recorder, at site 300 ft (91 m) upstream at present datum.

REMARKS.--Records fair except those for winter period or period of no gage-height record, June 29 to Aug. 9, which are poor.

COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,500 ft^3/s (99.1 m^3/s) Apr. 14, 1952, gage height, 6.15 ft (1.875 m), from rating curve extended above 2,100 ft^3/s (59.5 m^3/s) on basis of conveyance study; no flow at times most seasons.

EXTREMES FOR CURRENT SEASON.--Maximum discharge, 750 ft^3/s (21.2 m^3/s) Mar. 18, gage height, 4.53 ft (1.381 m), from floodmark (backwater from ice); no flow July 30 to Aug. 2, Aug. 22 to Sept. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			.50	1.1	.23	.07	.03	0	0	.18	.06	
2			.50	.94	.19	.07	.05	0	0	.15	.05	
3			.50	.87	.18	.08	.08	.01	0	.15	.29	
4			.50	.84	.16	.07	.06	.01	0	.08	---	
5			.50	.81	.14	.07	.04	.01	0	.05	---	
6			.50	.77	.15	.05	.03	.02	0	.05	---	
7			.50	.77	.14	.05	.02	.02	0	.05	---	
8			.50	.77	.13	.06	.01	.04	0	.05	---	
9			.50	.81	.11	.06	.01	.08	0	.05	---	
10			.50	.77	.09	.04	.01	.06	.01	.04	---	
11			.50	.69	.11	.05	.01	.06	.01	.04	---	
12			.50	.69	.11	.05	.02	.06	.01	.05	---	
13			.50	.63	.09	.04	.14	.05	.02	.06	---	
14			.50	.60	.08	.07	.08	.04	.02	.06	---	
15			.50	.55	.07	.07	.06	.02	.02	.04	---	
16			1.0	.50	.07	.07	.06	.02	.01	.04	---	
17			3.0	.43	.06	.07	.03	.01	.02	.05	---	
18			20	.43	.05	.06	.02	.01	.02	.06	---	
19			513	.43	.04	.05	.01	.01	.02	.06	---	
20			195	.43	.04	.04	.01	.01	.03	.07	---	
21			103	.43	.04	.03	.02	.01	.03	.07	---	
22			49	.43	.04	.14	.02	0	.04	.07	---	
23			31	.48	.04	.22	.01	0	.05	.07	---	
24			17	.46	.03	.16	.01	0	.07	.07	---	
25			10	.43	.04	.14	.01	0	.08	.07	---	
26			6.8	.39	.07	.14	.01	0	.10	.08	---	
27			5.6	.30	.06	.12	.01	0	.11	.09	---	
28			4.8	.26	.05	.08	.01	0	.14	.09	---	
29			3.4	.26	.07	.06	.01	0	.19	.09	---	
30			2.1	.25	.06	.04	0	0	.20	.08	---	
31			1.3	---	.06	---	0	0	---	.07	---	
TOTAL			973.50	17.52	2.80	2.32	.89	.55	1.20	2.23	---	
MEAN			31.4	.58	.090	.077	.029	.018	.040	.072	---	
MAX			513	1.1	.23	.22	.14	.08	.20	.18	---	
MIN			.50	.25	.03	.03	0	0	0	.04	---	
AC-FT			1930	35	5.6	4.6	1.8	1.1	2.4	4.4	---	

THE SEASON MARCH TO OCTOBER AC-FT 1,990

06156500 BELANGER CREEK DIVERSION CANAL NEAR VIDORA, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°29'39", long 109°21'50", in NW¼ sec.19, T.6, R.25 W., third meridian, Hydrologic Unit 10050013, on left bank 0.3 mi (0.5 km) downstream from diversion weir and 12 mi (19 km) north of Vidora.

PERIOD OF RECORD.--March 1946 to current season (seasonal records only). Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Altitude of gage is 3,200 ft (975 m) from Cypress Lake elevation.

REMARKS.--Records good. Canal diverts water from right bank of Belanger Creek in SW¼ sec.30, T.6, R.25 W., third meridian, for storage in Cypress Lake.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 598 ft^3/s (16.9 m^3/s) May 7, 1975; no flow at times each season.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			0	199	2.2							
2			0	92	.20							
3			0	36	.19							
4			0	46	.19							
5			0	71	.18							
6			0	100	.17							
7			0	100	.13							
8			0	67	.12							
9			0	49	.09							
10			0	34	.07							
11			0	27	.05							
12			0	20	.04							
13			0	14	0							
14			0	12	0							
15			0	8.7	0							
16			0	7.1	0							
17			0	6.2	0							
18			15	5.7	0							
19			188	4.9	0							
20			31	4.3	0							
21			24	4.1	0							
22			55	3.6	0							
23			113	3.5	0							
24			35	3.3	0							
25			58	3.2	0							
26			48	2.9	0							
27			43	2.7	0							
28			50	2.7	0							
29			52	2.7	0							
30			60	2.8	0							
31			114	---	0	---			---			
TOTAL	---		886	935.4	3.63	0	0	0	0	0		
MEAN	---		28.6	31.2	.12	0	0	0	0	0		
MAX	---		188	199	2.2	0	0	0	0	0		
MIN	---		0	2.7	0	0	0	0	0	0		
AC-FT	---		1760	1860	7.2	0	0	0	0	0		

THE SEASON MARCH TO OCTOBER AC-FT 3,620

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

06157500 CYPRESS LAKE EAST OUTFLOW CANAL NEAR VIDORA, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°29'12", long 109°21'08", in SE¼ sec.19, T.6, R.25 W., third meridian, Hydrologic Unit 10050013, on right bank 500 ft (152 m) upstream from Belanger Creek and 12.3 mi (19.8 km) north of Vidora.

PERIOD OF RECORD.--April to October 1940, April 1943 to current season (seasonal records only). Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Altitude of gage is 3,180 ft (969 m), from topographic map. Prior to Sept. 26, 1946, at datum 2.24 ft (0.683 m) higher and Sept. 26, 1946, to May 18, 1950, at datum 1.54 ft (0.469 m) higher.

REMARKS.--Records good except those for March and April, which are fair. Canal diverts water from Cypress Lake for irrigation in Frenchman River basin in Saskatchewan.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 202 ft^3/s (5.72 m^3/s) Apr. 19, 1952; no flow at times most seasons.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		---	.50	22	12	2.0	.77	3.5	.05	.56		
2		---	.50	24	8.2	.48	.70	1.7	.03	.63		
3		---	.50	2.9	6.8	.39	.61	.88	0	.82		
4		---	.50	2.2	5.9	5.1	.46	.55	0	.73		
5		---	.50	1.3	4.1	2.6	.33	.54	0	.60		
6		---	.50	1.0	3.3	1.8	.19	.46	0	.77		
7		---	.50	2.0	3.0	11	.14	.72	0	.89		
8		---	.50	3.0	2.6	4.2	.64	.35	0	.91		
9		---	.50	4.0	2.6	1.9	.26	.18	0	.91		
10		---	.50	5.0	2.4	1.3	.24	.18	0	.99		
11		---	.50	6.0	2.4	.93	.26	.21	0	1.0		
12		---	.50	6.5	2.6	.78	.95	.30	0	1.1		
13		---	.50	6.8	2.4	.77	2.2	.32	0	1.3		
14		---	.50	11	2.6	1.1	.68	.29	.06	1.2		
15		---	.60	18	2.4	1.1	1.1	.23	.09	.95		
16		---	.80	14	2.2	.98	.77	.26	.13	1.1		
17		---	1.0	12	2.2	1.0	.41	.24	.13	1.4		
18		---	37	11	2.0	.97	.25	.19	.16	1.4		
19		---	25	10	2.0	.84	.64	.19	.18	1.6		
20		---	2.9	10	1.9	.74	15	.19	.20	3.3		
21		---	1.8	9.4	1.8	.67	10	.18	.25	1.6		
22		---	4.1	10	1.9	.87	6.1	.19	.18	1.6		
23		---	3.4	15	1.8	.99	3.2	.20	.19	1.5		
24		.50	.10	12	1.2	.75	1.7	.18	.30	1.7		
25		.50	.17	7.9	.68	.57	1.0	.18	.67	1.6		
26		.50	.07	6.8	.60	.60	.76	.20	.96	1.7		
27		.50	.01	4.4	.32	.38	.59	.19	.85	1.8		
28		.50	3.9	2.9	.19	.24	5.5	.16	1.2	1.8		
29		.50	4.2	13	.26	4.3	5.9	.14	1.1	1.8		
30		---	2.8	12	.31	2.4	5.8	.11	.60	1.8		
31		---	6.2	---	20	---	5.6	.09	---	1.8		
TOTAL		---	101.05	266.1	102.66	51.75	72.75	13.30	7.33	40.86		
MEAN		---	3.26	8.87	3.31	1.73	2.35	.43	.24	1.32		
MAX		---	37	24	20	11	15	3.5	1.2	3.3		
MIN		---	.01	1.0	.19	.24	.14	.09	0	.56		
AC-FT		---	200	528	204	103	144	26	15	81		

THE SEASON MARCH TO OCTOBER AC-FT 1,300

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

06158500 EASTEND CANAL AT EASTEND, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°30'20", long 108°51'05", in NW¼ sec.25, T.6, R.22 W., third meridian, Hydrologic Unit 10050013, on left bank 100 ft (30 m) downstream from headgate and 1.5 mi (2.4 km) west of Eastend.

PERIOD OF RECORD.--March 1937 to current season (seasonal records only). Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,999.24 ft (914.168 m) above mean sea level (Geodetic Surveys of Canada datum). Prior to Sept. 19, 1949, at sites within 1 mi (2 km) downstream at different datums.

REMARKS.--Records fair. Canal diverts water from Eastend Reservoir in NW¼ sec.25, T.6, R.22 W., third meridian, on right bank for irrigation of about 3,100 acres (12.5 km^2) in the Frenchman River basin in Saskatchewan.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 84 ft^3/s (2.38 m^3/s) May 18, 1976; no flow at times each season.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1					0	73	.18	61	.30			
2					0	69	.19	52	.30			
3					0	62	.20	53	.30			
4					0	9.5	.18	56	.30			
5					0	.22	.05	54	.30			
6					0	.15	.04	47	.30			
7					0	.24	.07	38	.30			
8					0	5.3	.07	39	.30			
9					0	6.3	.02	40	.30			
10					0	.10	.02	38	.30			
11					0	.05	.02	25	.30			
12					0	.02	.03	28	.30			
13					0	.03	.02	20	.30			
14					0	.03	.03	11	.20			
15					9.0	.04	.04	5.6	.10			
16					14	.07	.05	.30	0			
17					67	.07	.04	.30	0			
18					84	.06	.02	.30	0			
19					83	.05	.01	.30	0			
20					83	.05	.02	.30	0			
21					82	.11	.02	.30	0			
22					81	.17	.02	.30	0			
23					81	.08	.02	.30	0			
24					81	.05	.02	.30	0			
25					80	.13	.37	.30	0			
26					78	.11	62	.30	0			
27					79	.09	77	.30	0			
28					78	.13	74	.30	0			
29					76	.16	74	.30	0			
30					74	.19	73	.30	0			
31				---	72	---	69	.30	---			
TOTAL			0	0	1202.0	227.50	430.75	572.40	4.20	0		
MEAN			0	0	38.8	7.58	13.9	18.5	.14	0		
MAX			0	0	84	73	77	61	.30	0		
MIN			0	0	0	.02	.01	.30	0	0		
AC-FT			0	0	2380	451	854	1140	8.3	0		

THE SEASON MARCH TO OCTOBER AC-FT 4,830

NOTE.--Differences between figures herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

06159500 FRENCHMAN RIVER BELOW EASTEND RESERVOIR, NEAR EASTEND, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°30'54", long 108°50'16", in SE¼ sec.36, T.6, R.22 W., third meridian, Hydrologic Unit 10050013, on left bank 0.8 mi (1.3 km) west of Eastend, 1.7 mi (2.7 km) downstream from Eastend Reservoir, and 100 mi (161 km) upstream from international boundary.

DRAINAGE AREA.--637 mi^2 (1,650 km^2), of which 159 mi^2 (412 km^2) in Cypress Lake basin is generally non-contributing.

PERIOD OF RECORD.--April 1909 to October 1916, March 1918 to May 1931, September 1935, March to July 1936, and April 1939 to current season (seasonal records only). Monthly discharge only for some periods, published in WSP 1309. Published as "at East End" 1909-16. Records prior to April 1939, not equivalent owing to diversion in Eastend Canal since 1937.

REVISED RECORDS.--WSP 1729: 1919, 1941 (monthly figures only), drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 2,960 ft (902 m), from topographic map. Prior to July 1941, nonrecording gages at several sites within 1.5 mi (2.4 km) of present site at various datums.

REMARKS.--Records good except those for periods of flow over 300 ft^3/s (8.50 m^3/s), which are fair. Natural flow of stream affected by storage reservoirs, diversions for irrigation, and return flow from irrigated areas. Water may be diverted into or from Battle Creek basin through Cypress Lake.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft^3/s (326 m^3/s) Apr. 16, 1952, gage height, 19.10 ft (5.822 m), from floodmark in gage house; no flow at times.

EXTREMES FOR CURRENT SEASON.--Maximum discharge, 1,380 ft^3/s (39.1 m^3/s) Apr. 1, gage height, 9.52 ft (2.902 m); maximum gage height, 10.67 ft (3.252 m) Mar. 20 (backwater from ice); minimum daily discharge, 2.3 ft^3/s (0.065 m^3/s) May 28.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		---	22	706	44	2.9	3.7	5.5	3.9	14	13	
2		---	22	992	43	2.9	3.8	5.3	3.9	17	13	
3		---	22	243	41	5.3	3.8	5.4	3.8	19	---	
4		---	21	138	16	2.9	3.7	5.0	3.8	11	---	
5		---	21	117	15	2.8	3.8	5.2	3.9	7.5	---	
6		---	21	206	13	2.9	3.5	5.1	3.8	18	---	
7		---	21	370	13	3.2	3.7	4.9	4.0	18	---	
8		---	21	268	13	3.2	4.0	4.7	4.1	19	---	
9		---	21	188	12	3.2	4.3	4.5	3.8	21	---	
10		---	20	130	8.7	3.4	5.0	4.5	3.7	20	---	
11		---	20	106	7.6	3.2	5.4	4.5	3.7	19	---	
12		---	20	94	5.6	3.1	6.4	6.2	3.8	25	---	
13		---	20	92	6.7	3.1	7.8	4.4	73	26	---	
14		---	20	66	8.2	3.2	7.2	4.3	17	21	---	
15		---	20	61	9.6	3.1	7.3	4.3	7.1	16	---	
16		---	20	61	9.5	3.3	7.7	4.4	6.2	20	---	
17		---	29	62	5.3	3.3	8.7	4.3	5.5	22	---	
18		---	158	62	3.3	3.4	9.4	19	4.7	20	---	
19		---	720	53	3.0	3.4	9.0	37	4.5	24	---	
20		---	935	46	2.9	4.0	9.2	4.5	4.3	14	---	
21		---	804	45	3.0	4.2	9.0	4.0	4.1	11	---	
22		---	418	45	3.0	5.0	8.8	4.0	4.3	12	---	
23		---	309	45	3.1	4.5	7.6	4.1	4.4	11	---	
24		23	436	45	3.1	3.9	8.1	4.2	4.6	14	---	
25		23	391	45	3.0	3.8	8.5	4.1	5.5	15	---	
26		23	209	45	2.8	3.7	6.4	4.1	6.6	16	---	
27		22	117	44	2.5	3.6	4.0	4.0	7.7	16	---	
28		22	95	43	2.3	3.5	6.0	4.1	6.5	16	---	
29		22	126	45	2.4	3.4	5.8	3.9	7.6	15	---	
30		---	161	44	3.2	3.4	5.9	3.9	8.9	18	---	
31		---	193	---	3.2	---	5.6	3.7	---	17	---	
TOTAL		---	5433	4507	312.0	104.8	193.1	187.1	228.7	532.5	---	
MEAN		---	175	150	10.1	3.49	6.23	6.04	7.62	17.2	---	
MAX		---	935	992	44	5.3	9.4	37	73	26	---	
MIN		---	20	43	2.3	2.8	3.5	3.7	3.7	7.5	---	
AC-FT		---	10780	8940	619	208	383	371	454	1060	---	

THE SEASON MARCH TO OCTOBER AC-FT 22,810

NOTE.--Stage-discharge relation affected by ice Feb. 24 to Mar. 24. Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

06161300 VAL MARIE WEST PUMPING CANAL NEAR VAL MARIE, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°22'19", long 107°53'02", in NW¼ sec.7, T.5, R.14 W., third meridian, Hydrologic Unit 10050013, on right bank 50 ft (15 m) downstream from pump discharge outlet, 11 mi (18 km) northwest of Val Marie.

PERIOD OF RECORD.--March 1963 to current season. July 1950 to current season in reports of Department of the Environment, Canada. Seasonal records only.

GAGE.--Water-stage recorder. Prior to 1956 and subsequent to 1960, records obtained from occasional discharge measurements and records of pump operation.

REMARKS.--Records good. Canal diverts water from Val Marie West Reservoir for irrigation of about 2,100 acres (8.50 km^2) in the Frenchman River basin in Saskatchewan.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 31 ft^3/s (0.88 m^3/s) May 30 to June 2, June 7-10, 1975; no flow at times each season.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1					0	16	0	28		0		
2					0	16	0	28		0		
3					0	8.5	0	28		0		
4					0	11	0	27		0		
5					0	5.9	0	28		0		
6					0	0	0	28		3.3		
7					0	0	0	28		3.9		
8					0	0	0	29		2.0		
9					0	0	0	28		0		
10					0	0	0	24		0		
11					0	0	0	16		0		
12					0	0	0	3.2		2.0		
13					0	0	0	3.2		0		
14					0	0	0	0		0		
15					21	0	0	0		0		
16					29	0	0	0		0		
17					29	0	0	0		0		
18					29	0	0	0		0		
19					29	0	0	0		0		
20					29	0	0	0		0		
21					29	0	0	0		0		
22					29	0	0	0		0		
23					30	0	17	0		0		
24					29	0	28	0		0		
25					30	0	28	0		0		
26					30	0	28	0		0		
27					30	0	28	0		0		
28					30	0	27	0		0		
29					30	0	28	0		0		
30					23	0	28	0		0		
31				---	16	---	28	0	---	0		
TOTAL			0	0	472	57.4	240	298.4	0	11.2		
MEAN			0	0	15.2	1.91	7.74	9.63	0	.36		
MAX			0	0	30	16	28	29	0	3.9		
MIN			0	0	0	0	0	0	0	0		
AC-FT			0	0	936	114	476	592	0	22		

THE SEASON MARCH TO OCTOBER AC-FT 2,140

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

06161500 VAL MARIE WEST GRAVITY CANAL NEAR VAL MARIE, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°22'10", long 107°53'06", in SW¼ sec.7, T.5, T.14 W., third meridian, Hydrologic Unit 10050013, on right bank at outlet of Val Marie West Reservoir, 11 mi (18 km) northwest of Val Marie.

PERIOD OF RECORD.--March 1946 to current season (seasonal records only). Monthly figures only prior to March 1947, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,662.88 ft (811.646 m) above mean sea level (Geodetic Survey of Canada datum). Prior to Sept. 27, 1949, at site 0.5 mi (0.8 km) downstream at different datum.

REMARKS.--Records good. Canal diverts water from Val Marie West Reservoir for irrigation of about 1,900 acres (7.69 km^2) in the Frenchman River basin in Saskatchewan. Since 1962, records have been based on gate openings in Val Marie West Dam.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 55 ft^3/s (1.56 m^3/s) July 14, 1972; no flow at times each season.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1					0	23	0	37	0			
2					0	20	0	35	0			
3					0	12	0	27	.81			
4					0	12	0	20	0			
5					0	9.1	0	15	0			
6					0	6.5	0	9.7	0			
7					0	6.7	0	6.2	0			
8					0	6.7	0	5.9	0			
9					0	6.7	0	2.0	0			
10					0	6.7	0	0	0			
11					0	2.3	0	0	0			
12					0	0	0	0	0			
13					0	0	0	0	0			
14					17	0	0	0	0			
15					26	0	.68	0	0			
16					25	0	0	0	0			
17					25	0	0	0	0			
18					24	0	0	0	0			
19					27	0	0	0	0			
20					28	0	0	0	0			
21					28	0	0	0	0			
22					27	0	0	0	0			
23					27	0	27	0	0			
24					21	0	28	0	0			
25					22	0	30	0	0			
26					24	0	31	0	0			
27					24	0	35	0	0			
28					22	0	41	0	0			
29					21	0	44	0	0			
30					22	0	39	0	0			
31				---	22	---	38	0	---			
TOTAL			0	0	432	111.7	313.68	157.8	.81	0		
MEAN			0	0	13.9	3.72	10.1	5.09	.027	0		
MAX			0	0	28	23	44	37	.81	0		
MIN			0	0	0	0	0	0	0	0		
AC-FT			0	0	857	222	622	313	1.6	0		

THE SEASON MARCH TO OCTOBER AC-FT 2,020

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

06162500 VAL MARIE MAIN CANAL NEAR VAL MARIE, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°18'18", long 107°48'05", in NE¼ sec.15, T.4, R.14 W., third meridian, Hydrologic Unit 10050013, on right bank about 500 ft (152 m) downstream from Val Marie Reservoir and 5.4 mi (8.7 km) northwest of Val Marie.

PERIOD OF RECORD.--April 1937 to current season (seasonal records only). Prior to April 1947 monthly discharge only, published in WSP 1309. Prior to March 1962, published as Val Marie Canal near Val Marie.

GAGE.--Water-stage recorder. Datum of gage is 2,622.03 ft (799.195 m) above mean sea level (Geodetic Surveys of Canada datum). Prior to May 21, 1963, at several sites within 2 mi (3 km) of present site at different datums.

REMARKS.--Records good. Canal diverts water from Val Marie Reservoir for irrigation of about 4,700 acres (19.0 km^2) in the Frenchman River basin in Saskatchewan.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 122 ft^3/s (3.46 m^3/s) May 26, 27, 1976; no flow at times each season.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1					0	109	0	89				
2					0	97	0	88				
3					0	102	0	86				
4					0	101	0	83				
5					0	100	0	68				
6					0	88	0	44				
7					0	70	0	25				
8					0	50	0	21				
9					0	46	0	20				
10					0	69	0	20				
11					0	66	0	20				
12					0	21	0	11				
13					0	9.5	0	0				
14					0	5.6	0	0				
15					0	0	0	0				
16					0	0	0	0				
17					0	0	0	0				
18					0	0	0	0				
19					0	0	0	0				
20					33	0	0	0				
21					60	0	36	0				
22					84	0	82	0				
23					93	0	104	0				
24					100	0	100	0				
25					115	0	94	0				
26					122	0	91	0				
27					122	0	92	0				
28					119	0	90	0				
29					117	0	90	0				
30					109	0	91	0				
31				---	108	---	90	0	---			
TOTAL			0	0	1182	934.1	960	575	0	0		
MEAN			0	0	38.1	31.1	31.0	18.5	0	0		
MAX			0	0	122	109	104	89	0	0		
MIN			0	0	0	0	0	0	0	0		
AC-FT			0	0	2340	1850	1900	1140	0	0		

THE SEASON MARCH TO OCTOBER AC-FT 7,240

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

06163050 FRENCHMAN RIVER BELOW VAL MARIE RESERVOIR, NEAR VAL MARIE, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°18'08", long 107°48'23", in NW¼ sec.15, T.4, R.14 W., third meridian, Hydrologic Unit 10050013, on left bank about 200 ft (61 m) downstream from spillway for Val Marie Reservoir, about 7 mi (11 km) northwest of Val Marie.

DRAINAGE AREA.--1,460 mi^2 (3,780 km^2).

PERIOD OF RECORD.--May 1976 to current season (operates as a low flow seasonal station only). June to October 1939, July to October 1965, and May 1966 to current season in reports of Department of the Environment, Canada. Seasonal records only.

GAGE.--Water-stage recorder. Datum of gage is 2,606.11 ft (794.342 m) above mean sea level (Geodetic Survey of Canada datum).

REMARKS.--Records good. Natural flow of stream affected by storage reservoirs, diversions for irrigation, and return flow from irrigated areas. Water may be diverted into or from Battle Creek basin through Cypress Lake.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR CURRENT SEASON.--Maximum daily discharge during period May to October, 46 ft^3/s (1.30 m^3/s) July 8, but was higher prior to gage activation; minimum daily, 2.5 ft^3/s (0.071 m^3/s) Sept. 24, 26.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			---	---	14	11	11	8.4	4.5	2.9		
2			---	---	14	11	11	8.2	4.4	3.0		
3			---	---	14	11	11	8.0	4.2	2.9		
4			---	---	14	10	11	12	4.1	2.8		
5			---	---	15	10	11	13	3.9	2.6		
6			---	20	15	10	21	13	3.8	2.6		
7			---	19	15	10	43	12	3.7	3.7		
8			---	19	16	10	46	11	3.6	4.6		
9			---	43	16	10	44	11	3.5	4.7		
10			---	115	15	9.7	44	11	3.4	4.8		
11			---	117	15	9.7	43	9.4	3.4	4.8		
12			---	120	13	9.3	43	7.8	3.3	4.8		
13			---	120	12	9.1	27	7.6	3.5	5.1		
14			---	117	11	9.2	12	7.6	3.3	5.4		
15			---	116	11	11	12	7.5	3.0	4.8		
16			---	117	11	10	11	7.1	2.9	4.9		
17			---	117	11	9.5	11	7.0	2.9	4.9		
18			20	117	11	9.5	11	6.9	2.9	5.0		
19			43	119	11	9.0	11	6.7	2.9	5.3		
20			---	119	12	8.9	11	6.7	2.9	7.9		
21			---	119	12	8.8	11	6.6	2.8	12		
22			---	119	12	8.6	13	6.4	2.7	12		
23			---	117	12	8.2	11	6.2	2.7	12		
24			---	116	12	8.2	11	5.9	2.5	12		
25			---	115	12	8.1	10	5.9	2.6	12		
26			---	77	12	8.0	9.9	5.9	2.5	13		
27			---	14	12	8.1	10	5.7	2.6	12		
28			---	14	12	8.4	9.7	5.3	2.6	12		
29			---	14	12	9.4	9.3	5.1	2.8	12		
30			---	14	11	10	9.0	5.0	2.9	12		
31			---	---	11	---	8.7	4.7	---	12		
TOTAL			---	---	396	283.7	557.6	244.6	96.8	220.5		
MEAN			---	---	12.8	9.46	18.0	7.89	3.23	7.11		
MAX			---	---	16	11	46	13	4.5	13		
MIN			---	---	11	8.0	8.7	4.7	2.5	2.6		
AC-FT			---	---	785	563	1110	485	192	437		

THE SEASON MAY TO OCTOBER AC-FT 3,570

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

06163400 DENNIEL CREEK NEAR VAL MARIE, SASKATCHEWAN

(International gaging station)

LOCATION.--Lat 49°18'26", long 107°42'12", in SW¼ sec.21, T.4, R.13 W., third meridian, Hydrologic Unit 10050013, on right bank 4.5 mi (7.2 km) north of Val Marie.

DRAINAGE AREA.--251 mi^2 (650 km^2).

PERIOD OF RECORD.--March 1963 to November 1976 (discontinued). Future discharge figures will be published in reports of the Water Survey of Canada. April 1914 to May 1931, September 1935 to October 1937, March 1963, to current season in reports of Department of the Environment, Canada. Seasonal records only.

GAGE.--Water-stage recorder. Altitude of gage is 2,620 ft (799 m), from topographic map. Prior to February 1963, nonrecording gage at site about 0.8 mi (1.3 km) downstream at different datum.

REMARKS.--Records fair.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,380 ft^3/s (67.4 m^3/s) June 18, 1923, gage height, 13.31 ft (4.057 m), site and datum then in use, from rating curve extended on basis of slope-area measurement of peak flow; no flow at times each season.

EXTREMES FOR CURRENT SEASON.--Maximum discharge, 1,150 ft^3/s (32.6 m^3/s) May 20, gage height, 11.59 ft (3.533 m); no flow several days.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			4.0	165	1.1	.10	.29			0		
2			2.0	67	.75	.08	.28			0		
3			.90	29	.47	.08	.49			0		
4			.50	26	.42	.08	.56			0		
5			.40	32	.38	.08	.43			0		
6			.30	27	.33	.08	.33			0		
7			.30	33	.30	.09	.20			0		
8			.30	29	.29	.09	.15			0		
9			.40	19	.26	.13	.07			0		
10			.40	13	.26	.17	.06			0		
11			.30	9.4	.28	.14	.01			0		
12			.20	7.5	.29	.18	0			0		
13			.20	6.1	.30	.21	0			0		
14			.20	4.8	.29	.17	0			0		
15			.20	3.9	.30	.21	0			0		
16			.40	3.2	.33	.23	0			0		
17			69	2.6	.29	.23	0			0		
18			222	2.3	.22	.32	0			0		
19			788	2.1	.22	.35	0			0		
20			935	2.0	.23	.29	0			0		
21			409	1.8	.24	.26	0			0		
22			279	1.6	.28	.29	0			0		
23			483	1.6	.25	.49	0			0		
24			210	1.5	.21	.52	0			0		
25			218	1.3	.21	.46	0			.01		
26			141	1.1	.26	.42	0			.07		
27			162	.76	.27	.37	0			.09		
28			137	.67	.24	.38	0			.20		
29			108	1.9	.19	.37	0			.20		
30			84	1.6	.18	.32	0			.20		
31			109	---	.13	---	0		---	.20		
TOTAL			4365.00	497.73	9.77	7.19	2.87	0	0	.97		
MEAN			141	16.6	.32	.24	.093	0	0	.031		
MAX			935	165	1.1	.52	.56	0	0	.20		
MIN			.20	.67	.13	.08	0	0	0	0		
AC-FT			8660	987	19	14	5.7	0	0	1.9		

THE SEASON MARCH TO OCTOBER AC-FT 9,690

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

06164000 FRENCHMAN RIVER AT INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 49°00'01", long 107°18'04", in SE¼ sec.5, T.1, R.10 W., third meridian, Hydrologic Unit 10050013, on left bank 50 ft (15 m) north of international boundary and 22 mi (35 km) northeast of Whitewater, Mt.

DRAINAGE AREA.--2,299 mi^2 (5,954 km^2).

PERIOD OF RECORD.--April 1917 to current season (seasonal records only for most seasons).

REVISED RECORDS.--WSP 1389: 1938(M), 1939-41, 1942(M), 1943, 1950(M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 2,420 ft (738 m), from topographic map. Prior to June 23, 1937, water-stage recorder at site 0.5 mi (0.8 km) upstream at different datum. June 23, 1937, to October 1952 water-stage recorder at site 100 ft (30 m) downstream at present datum.

REMARKS.--Records good except those for March, which are fair. No gage-height record Mar. 1, 3-5, 31, Oct. 5 to Nov. 3. Natural flow of stream affected by several storage reservoirs, diversions for irrigation of about 14,500 acres (58.7 km^2), and return flow from irrigated areas. Water may be diverted into or from Battle Creek basin through Cypress Lake.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,700 ft^3/s (643 m^3/s) Apr. 15, 1952, gage height, 19.90 ft (6.066 m), from floodmark, from rating curve extended above 2,300 ft^3/s (65.1 m^3/s) on basis of slope-area measurement of peak flow; no flow at times most seasons.

EXTREMES FOR CURRENT SEASON.--Maximum discharge, 1,700 ft^3/s (48.1 m^3/s) Mar. 28, gage height, 10.73 ft (3.271 m); maximum gage height, 15.49 ft (4.721 m) Mar. 21 (backwater from ice), from floodmark; no flow Sept. 13 to Oct. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			100	685	31	54	10	35	2.0	0	8.3	
2			105	763	29	47	21	38	1.2	0	8.3	
3			82	633	27	56	121	43	1.1	0	8.0	
4			68	516	26	61	85	47	.91	0	---	
5			64	492	25	50	28	40	.58	0	---	
6			59	622	25	50	19	42	.44	0	---	
7			54	794	24	43	15	44	.43	0	---	
8			36	918	23	57	12	44	.33	0	---	
9			29	631	23	67	16	47	.28	0	---	
10			27	152	23	40	41	30	.19	0	---	
11			25	122	23	25	45	22	.08	0	---	
12			26	164	23	24	64	19	.03	0	---	
13			23	157	22	33	41	15	0	0	---	
14			23	146	22	40	40	17	0	0	---	
15			23	153	20	30	38	19	0	0	---	
16			24	144	18	28	26	15	0	0	---	
17			121	141	17	23	16	9.3	0	0	---	
18			448	139	16	18	11	6.1	0	0	---	
19			665	138	16	15	9.9	3.6	0	0	---	
20			858	138	16	13	11	2.2	0	0	---	
21			1310	139	16	11	9.4	1.4	0	0	---	
22			1400	137	16	20	8.1	1.4	0	0	---	
23			1540	138	26	71	8.5	1.2	0	.70	---	
24			1480	136	25	67	8.8	1.1	0	3.7	---	
25			1400	132	24	47	12	1.0	0	9.7	---	
26			1370	129	33	28	28	.92	0	11	---	
27			1360	125	39	27	34	.94	0	11	---	
28			1610	102	42	24	38	1.1	0	10	---	
29			1630	42	45	16	43	1.0	0	9.7	---	
30			1270	33	48	12	47	1.2	0	9.3	---	
31			762	---	53	---	40	2.5	---	8.8	---	
TOTAL			17992	8761	816	1097	946.7	551.96	7.57	73.90	---	
MEAN			580	292	26.3	36.6	30.5	17.8	.25	2.38	---	
MAX			1630	918	53	71	121	47	2.0	11	---	
MIN			23	33	16	11	8.1	.92	0	0	---	
AC-FT			35690	17380	1620	2180	1880	1090	15	147	---	

THE SEASON MARCH TO OCTOBER AC-FT 59,990

NOTE.--Differences between figures published herein and corresponding figures of the Water Survey of Canada are due to variations in automated program teare due to variations in automated program techniques.

RESERVOIRS IN FRENCHMAN RIVER BASIN IN SASKATCHEWAN

(International gaging stations)

06157000 CYPRESS LAKE.--Lat 49°28'51", long 109°23'44", in SE¼ sec.23, T.6, R.26 W., third meridian, Hydrologic Unit 10050013, at east dam, 10.6 mi (17.1 km) north of Vidora. DRAINAGE AREA, 159 mi^2 (412 km^2). PERIOD OF RECORD, February 1939 to current season (seasonal records only). Records prior to October 1946, published only in WSP 1309. March to May 1952 daily elevations and contents, published in WSP 1260-B. Water-stage recorder at east dam. Datum of gage is at mean sea level (Canadian Geodetic Survey datum; subtract 33.67 ft or 10.263 m to obtain Reclamation Service datum). Prior to 1969 season, at Reclamation Service datum. Prior to 1940, nonrecording gage on natural lake at "South" station. February 1940 to Apr. 28, 1955, elevation obtained from average of nonrecording gage readings at west and east dams.

This is an offstream reservoir formed by two earthfill dams on a natural lake of the same name which was, at one time, the head of the Frenchman River. There are concrete control works at both dams. The following capacity figures are from capacity table effective February 1970; see previous reports for superseded figures. Total capacity, 105,300 acre-ft (130 hm^3) between elevation 3,187.17 ft (971.449 m), bottom of outlet works, and 3,202.17 ft (976.021 m), maximum design level. Dead storage, 25,130 acre-ft (31.0 hm^3) below elevation 3,187.17 ft (971.449 m). Water is diverted from Battle Creek on the west, 12 mi (19 km) northwest of Consul, and from Belanger Creek, head of Frenchman River, on the east, 12 mi (19 km) north of Vidora. Water is released to the same streams for irrigation. Figures given herein represent total contents. This is one of a number of stations which are maintained jointly by Canada and the United States. Records partly furnished by Prairie Farms Rehabilitation Administration, Canada.

EXTREMES FOR PERIOD OF RECORD: Maximum contents, 117,300 acre-ft (145 hm^3) Apr. 21, 1955, elevation, 3,203.36 ft (976.384 m, present datum), by capacity table used prior to 1970 season; minimum since first filling, 32,760 acre-ft (40.4 hm^3) Oct. 26, 1964, elevation, 3,188.11 ft (971.736 m, present datum) by capacity table used prior to 1970 season.

EXTREMES FOR CURRENT SEASON: Maximum contents, 86,190 acre-ft (106 hm^3) Apr. 13, elevation, 3,198.86 ft (975.013 m); minimum observed, 68,170 acre-ft (84.1 hm^3) Nov. 1, elevation, 3,195.61 ft (974.022 m).

06159000 EASTEND RESERVOIR.--Lat 49°30'22", long 108°51'08", in NW¼ sec.25, T.6, R.22 W., third meridian, Hydrologic Unit 10050013, at dam on Frenchman River, 1.6 mi (2.6 km) west of Eastend. DRAINAGE AREA, 636 mi^2 (1,647 km^2). PERIOD OF RECORD, February 1937 to current season (seasonal records only). Prior to 1958, published as East End Reservoir at East End. Nonrecording gages read about once a day during irrigation season and twice a day during high stages. Datum of gage is at mean sea level (Canadian Geodetic Survey datum).

Reservoir is formed by earthfill dam completed in 1939, breached during flood in 1952 and rebuilt the same year with a concrete spillway and control works. Usable capacity, 3,300 acre-ft (4.07 hm^3) between elevation 3,000.9 ft (914.67 m), bottom of outlet works, and 3,015 ft (919.0 m), spillway crest. Dead storage, 37 acre-ft (45,600 m^3) below elevation 3,000.9 ft (914.67 m). Prior to 1963, usable capacity was 3,700 acre-ft (4.56 hm^3). Figures given herein represent usable contents. Water is used for irrigation. This is one of a number of stations which are maintained jointly by Canada and the United States. Records partly furnished by Prairie Farms Rehabilitation Administration, Canada. REVISED RECORDS (SEASONS), WSP 1309: 1948(M). WSP 1729: Drainage area. WSP 2116: 1937-65

EXTREMES FOR PERIOD OF RECORD: Maximum contents, about 3,700 acre-ft (4.56 hm^3) Apr. 15, 1952, elevation, about 3,015 ft (919.0 m), dam overtopped; no storage at various times.

EXTREMES FOR CURRENT SEASON: Maximum contents observed, 2,350 acre-ft (2.90 hm^3) Apr. 1, elevation, 3,013.00 ft (918.362 m); minimum observed, 161 acre-ft (198,500 m^3) Sept. 21, elevation, 3,003.38 ft (915.430 m).

06162000 VAL MARIE WEST RESERVOIR.--Lat 49°22'06", long 107°53'22", near center of east line of sec.12, T.5, R.15 W., third meridian, Hydrologic Unit 10050013, at dam on Frenchman River, 11 mi (18 km) northwest of Val Marie. PERIOD OF RECORD, February 1940 to current season (seasonal records only). Records prior to October 1946, published only in WSP 1309. April to May 1952 daily elevations and contents, published in WSP 1260-B. Water-stage recorder. Datum of gage is at mean sea level (Canadian Geodetic Survey datum). May 1952 to May 1954, reference point on control structure. May 1954 to May 10, 1966, nonrecording gages.

Reservoir is formed by earthfill dam with concrete control works completed in 1939. Usable capacity, 3,540 acre-ft (4.36 hm^3) between elevation 2,662.8 ft (811.62 m), bottom of outlet works, and 2,676.35 ft (815.75 m), maximum design level. No dead storage. Prior to February 1961, total capacity, 2,270 acre-ft (2.80 hm^3); dead storage, 100 acre-ft (123,000 m^3) below elevation 2,660.0 ft (810.77 m) and February 1961 to 1963, 8 acre-ft (9,860 m^3) below elevation 2,663.0 ft (811.68 m). Figures given herein represent usable contents. Water is used for irrigation. This is one of a number of stations which are maintained jointly by Canada and the United States. Records partly furnished by Prairie Farms Rehabilitation Administration, Canada. REVISED RECORDS (SEASONS), WSP 1309: 1947-50.

EXTREMES FOR PERIOD OF RECORD: Maximum contents, 4,360 acre-ft (5.38 hm^3) May 20, 1967, elevation, 2,677.83 ft (816.203 m); no storage Feb. 28, Mar. 31, 1950.

EXTREMES FOR CURRENT SEASON: Maximum contents, 4,060 acre-ft (5.01 hm^3) Mar. 28, elevation, 2,677.30 ft (816.041 m); minimum daily, 1,460 acre-ft (1.80 hm^3) Aug. 11, elevation, 2,672.00 ft (814.426 m).

RESERVOIRS IN FRENCHMAN RIVER BASIN IN SASKATCHEWAN--Continued

(International gaging stations)

06163000 VAL MARIE RESERVOIR.--Lat 49°18'18", long 107°48'11", in NE¼ sec.15, T.4, R.14 W., third meridian, Hydrologic Unit 10050013, at dam on Frenchman River, 5.4 mi (8.7 km) northwest of Val Marie. PERIOD OF RECORD, February 1937 to current season (seasonal records only). Water-stage recorder. Datum of gage is at mean sea level (Canadian Geodetic Survey datum). Prior to May 11, 1966, nonrecording gages.

Reservoir is formed by earthfill dam with concrete control works; construction began in 1936; storage began in 1937; completed in 1938. Usable capacity, 14,100 acre-ft (17.4 hm^3) between elevation 2,619.5 ft (798.42 m), bottom of outlet works, and 2,638.57 ft (804.236 m), top of dam. No dead storage. Prior to February 1966, capacity varied from 11,060 acre-ft (13.6 hm^3) to 16,560 acre-ft (20.4 hm^3), including dead storage of 829 acre-ft (1.02 hm^3). Figures given herein represent usable contents. Water is used for irrigation. This is one of a number of stations which are maintained jointly by Canada and the United States. Records partly furnished by Prairie Farms Rehabilitation Administration, Canada. REVISED RECORDS (SEASONS), WSP 2116: 1937-65. WSP 1729: 1949.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 18,920 acre-ft (23.3 hm^3) Apr. 19, 1952, elevation, 2,638.80 ft (804.306 m); no storage at times.

EXTREMES FOR CURRENT SEASON: Maximum contents, 11,200 acre-ft (13.8 hm^3) Mar. 21, elevation, 2,636.84 ft (803.709 m); minimum daily, 1,980 acre-ft (2.44 hm^3) Oct. 15, 16, elevation, 2,627.67 ft (800.914 m).

Monthend contents, in acre-feet, year October 1975 to October 1976

Date	Cypress Lake	Eastend Reservoir	Val Marie West Reservoir	Val Marie Reservoir
Oct. 31	72,600	179	2,480	5,570
Nov. 30	-	-	-	-
Dec. 31	-	-	-	-
Jan. 31	-	-	-	-
Feb. 28	72,990	171	3,620	5,900
Mar. 31	80,790	2,160	3,250	10,590
Apr. 30	85,850	1,970	3,660	8,990
May 31	80,350	567	1,670	7,640
June 30	79,520	1,930	3,540	5,890
July 31	74,310	1,330	2,200	3,440
Aug. 31	71,780	411	1,830	2,470
Sept. 30	69,860	165	1,810	2,100
Oct. 31	68,280	171	1,660	2,000

06164800 BEAVER CREEK ABOVE DIX CREEK, NEAR MALTA, MT

LOCATION.--Lat 48°05'30", long 107°33'18", in SE¼ sec.14, T.27 N., R.32 E., Phillips County, Hydrologic Unit 10050014, on left bank 29 ft (8.8 m) downstream from bridge on county road, 1 mi (2 km) upstream from Dix Creek, and 25 mi (40 km) southeast of Malta.

DRAINAGE AREA.--929 mi^2 (2,406 km^2).

PERIOD OF RECORD.--October 1966 to September 1969, October 1975 to September 1976.

GAGE.--Water-stage recorder. Datum of gage is 2,269.18 ft (691.646 m) above mean sea level.

REMARKS.--Records poor. No gage-height record most days Oct. 1 to Aug. 25. Some regulation by numerous small reservoirs on tributary streams.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,300 ft^3/s (65.1 m^3/s) Mar. 22, 1969, gage height, 14.74 ft (4.493 m), backwater from ice; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 600 ft^3/s (17.0 m^3/s) Feb. 2; maximum gage height, 8.04 ft (2.451 m) Feb. 2 (backwater from ice); no flow on many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.50	0	12	320	14	4.0	2.0	.50	28	.50	
2	0	0	2.0	10	600	12	2.0	3.0	2.0	10	.50	
3	0	0	10	10	550	12	1.0	3.0	1.0	14	.50	
4	0	0	18	10	350	18	1.0	4.0	.50	20	.50	
5	0	0	14	13	100	20	.50	4.0	1.0	25	.50	
6	0	0	22	10	85	21	1.0	4.0	2.0	30	.50	
7	0	0	28	7.0	75	21	2.0	4.0	3.0	27	.50	
8	2.0	0	24	4.0	66	21	2.0	4.0	50	25	.50	
9	14	0	20	4.0	60	20	3.0	4.0	45	23	.50	
10	12	0	13	4.0	54	18	4.0	4.0	25	21	.50	
11	10	0	10	10	48	16	4.0	2.0	10	35	1.0	
12	8.0	0	8.0	9.0	44	18	3.0	1.5	14	52	4.0	
13	8.0	4.0	7.0	7.0	40	20	2.0	1.0	22	70	15	
14	25	12	6.0	6.0	35	23	1.0	1.0	27	90	10	
15	23	14	5.0	6.0	32	30	1.0	1.0	33	120	6.0	
16	22	12	4.0	5.0	29	35	1.0	1.0	31	160	1.5	
17	21	10	3.0	10	27	45	.50	1.0	30	125	1.0	
18	20	8.0	6.0	14	24	54	.50	1.0	27	90	1.0	
19	14	5.0	13	20	22	66	.50	1.0	24	60	1.0	
20	8.0	2.0	16	16	20	60	0	1.0	22	35	1.0	
21	5.0	.50	15	18	21	95	0	1.0	17	21	1.0	
22	4.0	0	12	18	22	115	0	1.0	40	11	.50	
23	3.0	0	11	15	22	95	0	.50	85	13	.50	
24	2.0	0	10	13	24	75	3.0	.50	155	11	.50	
25	2.0	0	12	12	23	60	6.0	.50	135	9.0	.50	
26	1.5	0	14	10	22	47	10	1.0	120	8.0	0	
27	1.0	0	14	8.0	21	35	12	.50	110	5.0	0	
28	1.0	0	14	42	20	25	6.0	.50	94	3.0	0	
29	1.0	0	13	70	18	15	3.0	0	74	1.5	0	
30	1.0	0	12	110	---	12	1.0	0	50	.50	0	
31	.50	---	12	200	---	8.0	---	0	---	.50	0	---
TOTAL	209.00	68.00	370.0	704.0	2770	1146.0	75.00	53.00	1252.00	1143.50	44.50	0
MEAN	6.74	2.27	11.9	22.7	95.7	37.0	2.50	1.71	41.7	36.9	1.60	0
MAX	25	14	28	200	600	115	12	4.0	155	160	15	0
MIN	0	0	0	4.0	18	8.0	0	0	.50	.50	0	0
AC-FT	415	135	734	1400	5510	2270	149	105	2480	2270	88	0

WTR YR 1976 TOTAL 7646.00 MEAN 21.4 MAX 600 MIN 0 AC-FT 15160

06169500 ROCK CREEK BELOW HORSE CREEK, NEAR INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 48°58'10", long 106°50'20", in NE¼NW¼ sec.15, T.37 N., R.37 E., Valley County, Hydrologic Unit 10050015, on right bank 2 mi (3 km) south of international boundary, 3 mi (5 km) downstream ffrom Horse Creek, and 21 mi (34 km) northwest of Opheim, Mt.

DRAINAGE AREA.--328 mi^2 (850 km^2).

PERIOD OF RECORD.--March 1916 to October 1926, September 1956 to current season (seasonal records only). Monthly discharge only for some periods, published in WSP 1309. Published as Rock Creek near Barnard, Mt. 1916-17. Prior to September 1956, records were collected at both Horse Creek (1914-56) and Rock Creek above Horse Creek (1914-56). Summations are equivalent to records at this site.

REVISED RECORDS.--WSP 1509: 1925(M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 2,530 ft (771 m), from topographic map. March 1916 to October 1926, nonrecording gages at several sites within 500 ft (152 m) upstream at different datum.

REMARKS.--Records good except those for winter months, which are poor. Several small diversions for irrigation above station.

COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,420 ft^3/s (125 m^3/s) Apr. 7, 1969, gage height, 12.03 ft (3.667 m); no flow at times most seasons.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 15, 1952, reached a stage of 12.6 ft (3.84 m), from flood-marks, discharge, 5,110 ft^3/s (145 m^3/s), by slope-area measurement of peak flow.

EXTREMES FOR CURRENT SEASON.--Maximum discharge, 1,720 ft^3/s (48.7 m^3/s) Mar. 20, gage height, 9.54 ft (2.908 m), backwater from ice; minimum, 0.30 ft^3/s (0.008 m^3/s) Sept. 2, 5, 6, gage height, 2.07 ft (0.631 m).

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		---	5.8	407	12	2.8	4.8	.96	.36	.81		
2		---	5.3	252	11	3.3	10	.87	.34	.92		
3		---	4.2	134	10	3.9	97	.84	.36	1.2		
4		---	3.3	91	9.5	3.7	57	.85	.35	1.1		
5		---	2.4	89	8.5	3.6	25	.82	.32	.92		
6		---	5.0	95	8.3	3.3	15	.74	.32	1.0		
7		---	5.3	91	7.6	4.5	9.7	.74	.38	1.1		
8		---	4.7	76	6.9	6.7	6.9	.84	.37	1.1		
9		---	3.9	60	6.4	12	4.6	41	.40	1.2		
10		---	4.4	49	6.0	13	3.5	27	.49	1.3		
11		---	3.7	38	5.9	9.5	2.8	13	.48	1.3		
12		---	3.1	31	5.4	8.3	6.4	7.6	.47	1.3		
13		---	3.3	27	5.3	9.1	56	15	.54	1.4		
14		---	3.5	23	5.3	7.7	40	9.1	.55	1.4		
15		---	3.5	21	5.4	6.4	19	6.7	.61	1.3		
16		---	4.7	19	5.6	5.9	11	4.2	1.2	1.4		
17		---	6.6	18	5.6	4.9	6.6	2.7	1.0	1.4		
18		---	20	17	4.7	4.0	4.2	2.0	.66	1.4		
19		---	243	17	4.3	3.4	3.3	1.5	.82	1.5		
20		---	1410	17	4.4	3.4	11	1.1	.91	1.6		
21		---	1270	17	4.4	3.2	13	1.1	.70	1.7		
22		---	1010	18	4.1	4.4	6.6	.80	.81	1.9		
23		---	1380	24	3.8	5.3	6.9	.68	1.1	2.1		
24		3.1	1480	27	3.6	7.3	10	.74	.96	2.1		
25		5.6	1160	29	3.2	33	6.3	.71	.86	2.1		
26		7.5	972	25	3.3	23	3.6	.55	.90	2.2		
27		6.4	754	21	3.3	20	2.2	.44	.86	2.2		
28		5.8	581	18	3.2	13	1.7	.42	.86	2.3		
29		5.6	434	16	3.0	8.1	1.4	.37	.83	2.6		
30		---	338	14	3.2	5.6	1.2	.37	.77	2.9		
31		---	329	---	2.9	---	1.1	.37	---	2.8		
TOTAL	---	---	11453.7	1781	176.1	242.3	447.8	144.11	19.78	49.55		
MEAN	---	---	369	59.4	5.68	8.08	14.4	4.65	.66	1.60		
MAX	---	---	1480	407	12	33	97	41	1.2	2.9		
MIN	---	---	2.4	14	2.9	2.8	1.1	.37	.32	.81		
AC-FT	---	---	22720	3530	349	481	888	286	39	98		

THE SEASON MARCH TO OCTOBER AC-FT 28,390

06170000 MCEACHERN CREEK AT INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 48°59'30", long 106°55'40", in SW¼ sec.1, T.37 N., R.36 E., Valley County, Hydrologic Unit 10050015; on left bank 0.5 mi (0.8 km) downstream from East Fork, 0.7 mi (1.1 km) south of international boundary, and 8 mi (13 km) north of Thoeny, Mt.

DRAINAGE AREA.--182 mi^2 (471 km^2).

PERIOD OF RECORD.--April 1924 to October 1976 (discontinued). Seasonal records only for most seasons. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1176: 1939(M). WSP 1389: 1927, 1931(M), 1933-36, 1938(M), 1939, 1942(M), 1943, 1944-45(M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Concrete control since October 1938. Altitude of gage is 2,540 ft (774 m), from topographic map. Prior to Mar. 1, 1927, nonrecording gage at site 0.2 mi (0.3 km) downstream at datum 1.25 ft (0.381 m) lower. Mar. 1, 1927, to Oct. 1, 1938, nonrecording gage at site 350 ft (107 m) upstream at present datum. Oct. 2, 1938, to May 28, 1962, nonrecording gage at present site and datum.

REMARKS.--Records fair except those for winter period, which are poor.

COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,080 ft^3/s (201 m^3/s) Apr. 15, 1952, gage height, 13.85 ft (4.221 m), from floodmark, from rating curve extended above 2,800 ft^3/s (79.3 m^3/s) on basis of slope-area measurement of peak flow; no flow at times each season.

EXTREMES FOR CURRENT SEASON.--Maximum discharge, 2,440 ft^3/s (69.1 m^3/s) Mar. 20, gage height, 9.28 ft (2.829 m); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		---	.50	196	.84	.18	.33	.08			0	
2		---	0	139	.69	.18	5.1	.07			---	
3		---	0	62	.60	.14	8.0	.06			---	
4		---	0	42	.60	.11	3.3	.05			---	
5		---	0	38	.53	.10	1.1	.04			---	
6		---	0	46	.50	.11	.69	.03			---	
7		---	0	47	.46	.66	.48	.02			---	
8		---	0	35	.39	.85	.28	.02			---	
9		---	0	27	.35	2.6	.20	.02			---	
10		---	0	24	.31	.64	.15	.01			---	
11		---	0	19	.31	.69	.14	.01			---	
12		---	0	16	.35	.53	.76	.01			---	
13		---	0	9.4	.23	.31	.90	.01			---	
14		---	0	1.6	.22	.39	.55	.01			---	
15		---	0	4.5	.22	.31	.30	0			---	
16		---	0	5.1	.20	.33	.18	.10			---	
17		---	5.0	4.1	.18	.37	.13	.09			---	
18		---	100	3.2	.19	.30	.13	.07			---	
19		---	745	3.2	.18	.20	.16	.05			---	
20		---	2110	2.6	.16	.13	.74	.03			---	
21		---	777	2.4	.15	.12	.55	.01			---	
22		---	534	1.9	.18	.23	.50	0			---	
23		---	914	2.6	.16	.28	.26	0			---	
24		0	642	2.6	.15	.31	.15	0			---	
25		9.9	479	1.9	.15	.37	.12	0			---	
26		20	275	1.6	.18	.43	.12	0			---	
27		8.8	303	1.3	.14	.41	.12	0			---	
28		2.5	218	1.1	.12	.37	.11	0			---	
29		1.0	150	1.0	.12	.35	.10	0			---	
30		---	152	.90	.13	.33	.10	0			---	
31		---	156	---	.12	---	.09	0	---		---	
TOTAL	---	---	7580.50	742.00	9.11	12.73	25.64	.79	0	0	---	
MEAN	---	---	244	24.7	.29	.42	.83	.026	0	0	---	
MAX	---	---	2110	196	.84	2.6	8.0	.10	0	0	---	
MIN	---	---	0	.90	.12	.10	.09	0	0	0	---	
AC-FT	---	---	15000	1470	18	25	51	1.6	0	0	---	

THE SEASON MARCH TO OCTOBER AC-FT 16,560

06172310 MILK RIVER AT TAMPICO, MT

LOCATION.--Lat 48°18'29", long 106°49'19", in SW¼SW¼SW¼ sec.32, T.30 N., R.38 E., Valley County, Hydrologic Unit 10050012, at county bridge 0.8 mi (1.3 km) downstream from Buggy Creek, and 0.3 mi (0.5 km) northeast of Tampico.

DRAINAGE AREA.--21,078 mi^2 (54,592 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1973 to current year.

GAGE.--Nonrecording gage. Altitude of gage is 2,110 ft (643 m), from topographic map.

REMARKS.--Water-discharge records fair except those for winter period, which are poor. Flow increased during irrigation season by water from St. Mary Canal which diverts from the St. Mary River near Babb (see p. 31). Flow regulated by Fresno Reservoir (see p. 582), two reservoirs in Lodge Creek basin in Saskatchewan (see p. 180) and four reservoirs in Frenchman River basin in Saskatchewan (see p.207-208). There are many small dams for the diversion of irrigation canals upstream, the closest being Vandalia Dam 19 mi (31 km) upstream. Diversions above station for irrigation of about 126,000 acres (510 km^2) of which 17,000 acres (68.8 km^2) lies below station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,210 ft^3/s (233 m^3/s) May 26, 1974, gage height, 23.65 ft (7.209 m), from graph based on gage readings; maximum gage height, 25.25 ft (7.696 m), Mar. 22, 1976 (backwater from ice jam) from graph based on gage readings; minimum discharge observed, 0.20 ft^3/s (0.006 m^3/s) Oct. 14, 1974.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 17, 1952, reached an observed stage of 38.67 ft (11.787 m), furnished by Corps of Engineers, at Vandalia Dam 19 mi (31 km) upstream at different datum; discharge, about 45,000 ft^3/s (1,270 m^3/s).

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 8,200 ft^3/s (232 m^3/s) Mar. 22; maximum gage height, 25.25 ft (7.696 m), Mar. 22 (backwater from ice jam), from graph based on gage readings; minimum daily, 11 ft^3/s (0.312 m^3/s) May 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	804	422	320	800	350	3460	302	27	224	24	245
2	66	796	404	300	700	330	3530	264	62	506	25	245
3	54	928	416	280	500	300	3270	215	72	1540	35	215
4	45	1500	439	250	400	320	2430	190	59	1400	45	224
5	49	1100	456	230	330	350	1920	95	61	1300	59	207
6	49	808	429	220	350	400	1570	43	116	817	358	190
7	49	708	392	210	360	410	1310	53	157	542	425	185
8	60	660	371	200	370	410	1430	59	248	497	378	162
9	51	824	353	210	380	400	1510	65	770	309	372	124
10	48	612	350	230	380	380	1750	162	2120	298	383	141
11	49	860	340	280	380	370	1700	95	1340	355	407	120
12	49	824	330	260	400	350	1530	78	157	378	516	122
13	49	816	320	250	410	360	1150	49	462	988	428	114
14	481	812	300	260	410	380	911	41	395	2270	413	177
15	439	796	300	270	400	410	1030	22	392	1610	404	165
16	474	620	290	280	380	450	1090	16	366	1300	569	95
17	544	537	310	290	380	500	1340	15	762	1390	566	132
18	551	583	330	290	380	1000	821	23	676	1230	440	128
19	499	760	350	290	360	2000	250	36	446	709	349	120
20	446	537	370	295	330	4000	86	27	440	378	386	130
21	624	586	360	290	360	6000	58	14	437	829	366	120
22	436	892	350	290	400	8000	124	16	230	915	344	146
23	308	644	360	290	440	7500	366	16	506	899	331	155
24	275	604	370	270	470	7390	497	12	456	657	312	160
25	323	520	370	250	500	6760	549	20	672	590	258	122
26	359	495	370	260	450	6650	506	24	1070	539	344	112
27	401	450	370	270	410	6270	487	16	903	116	327	104
28	422	429	360	280	390	5970	481	11	766	35	310	108
29	608	389	360	280	380	5550	449	18	239	27	298	112
30	628	416	360	330	---	4680	428	17	261	28	298	102
31	756	---	340	450	---	3840	---	16	---	16	281	---
TOTAL	9267	21310	11242	8475	12200	82080	36033	2030	14608	22752	10051	4482
MEAN	299	710	363	273	421	2648	1201	65.5	469	734	324	149
MAX	756	1500	456	450	800	8000	3530	302	2120	2270	569	245
MIN	45	389	290	200	330	300	58	11	27	16	24	95
AC-FT	18380	42270	22300	16810	24200	162800	71470	4030	29090	45130	19940	8890

CAL YR 1975 TOTAL 383246 MEAN 1050 MAX 7720 MIN 45 AC-FT 760200
WTR YR 1976 TOTAL 234590 MEAN 641 MAX 8000 MIN 11 AC-FT 465300

06172310 MILK RIVER AT TAMPICO, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1973 to current year.
WATER TEMPERATURES: October 1973 to current year.

REMARKS.--Flow regulated by several reservoirs and diversions for irrigation upstream from station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,970 micromhos Jan. 6, 1974; minimum daily, 235 micromhos Apr. 11, 1974.
WATER TEMPERATURES: Maximum daily, 28.0°C July 28, 29, 1975; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,550 micromhos June 4; minimum daily, 317 micromhos Mar. 21.
WATER TEMPERATURES: Maximum daily, 24.5°C Aug. 3; minimum daily, 0.0°C on many days during November to March.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE (DEG C)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
OCT												
10...	1330	46	1140	8.5	310	58	71	33	130	3.2	6.4	311
NOV												
14...	1200	830	792	1.0	220	7	50	24	82	2.4	4.9	264
DEC												
19...	1330	416	1270	.0	370	71	85	39	150	3.4	6.4	368
JAN												
15...	1430	271	1380	.5	400	76	92	42	160	3.5	7.5	398
FEB												
06...	1130	300	583	.5	130	9	29	14	63	2.4	8.5	148
MAR												
24...	1400	6830	384	1.0	84	16	19	8.8	38	1.8	4.8	82
APR												
16...	1035	1420	626	12.5	180	5	41	18	63	2.1	6.8	209
MAY												
12...	1200	81	555	6.5	270	37	61	28	110	2.9	7.5	281
JUN												
03...	1130	71	--	21.0	430	82	95	46	180	3.8	8.0	420
JUL												
16...	1300	1290	889	22.5	210	43	47	23	110	3.3	7.4	206
AUG												
06...	1200	309	1010	22.5	290	43	68	30	120	3.1	6.6	305
SEP												
10...	1200	60	727	17.0	220	22	49	24	76	2.2	4.7	243

DATE	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT												
10...	330	17	.3	5.0	746	1.01	92.9	.04	.01	.00	10	90
NOV												
14...	180	12	.2	3.7	487	.66	1090	.02	.04	.01	10	20
DEC												
19...	350	23	.3	8.1	844	1.15	948	.18	.04	.01	10	80
JAN												
15...	410	20	.4	8.9	938	1.28	686	.28	.02	.00	20	110
FEB												
06...	150	8.5	.2	5.8	354	.48	287	.25	.11	.06	180	70
MAR												
24...	100	3.9	.1	4.5	221	.30	4080	.17	.04	.00	250	70
APR												
16...	130	7.3	.2	5.7	375	.51	1440	.01	.13	.01	60	0
MAY												
12...	250	14	.3	4.9	614	.84	134	.01	--	.00	30	20
JUN												
03...	460	21	.4	7.5	1030	1.40	197	--	--	--	0	60
JUL												
16...	270	11	.4	6.1	577	.78	2010	.04	.06	.03	30	0
AUG												
06...	280	14	.3	6.0	676	.92	564	.04	.02	.01	20	40
SEP												
10...	180	10	.3	4.1	468	.64	76.3	.03	.05	.00	10	10

06172310 MILK RIVER AT TAMPICO, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	961	1120	900	1360	712	641	500	809	1380	1220	847	729
2	970	859	839	1360	640	741	567	828	1490	1260	876	729
3	1050	840	908	1360	637	820	641	840	1480	887	915	727
4	1050	732	903	1360	637	865	585	855	1550	---	1040	725
5	1060	701	903	1360	637	866	550	872	1260	969	1130	729
6	1080	669	908	1330	649	866	540	874	1180	806	813	729
7	1110	671	902	1320	637	900	591	890	1180	795	820	732
8	1120	691	1000	1300	694	898	579	953	1060	818	828	741
9	1120	722	999	1320	644	899	549	963	1040	932	851	751
10	1130	677	999	1310	570	902	535	941	1100	1050	848	741
11	1120	696	1100	1320	529	901	549	939	681	1050	811	743
12	1130	688	1100	1330	523	902	529	932	702	1030	761	858
13	1120	687	1100	1320	530	921	602	975	869	1040	761	778
14	1070	701	1100	1310	553	925	593	998	911	739	741	789
15	1040	789	1180	1320	541	925	593	1010	917	708	770	780
16	1120	741	1180	1320	556	981	601	1020	945	871	743	772
17	1300	727	1190	1330	701	987	588	1030	900	870	741	782
18	1200	724	1190	1340	590	988	620	1070	888	880	780	819
19	1080	740	1190	1330	585	981	---	1110	1000	894	761	809
20	1080	765	1230	1220	580	392	769	1120	802	802	705	821
21	906	758	1240	1200	606	317	780	1120	832	738	702	845
22	989	809	1240	1220	648	351	789	1180	851	675	688	862
23	1050	832	1240	1220	670	323	890	1190	1150	711	682	811
24	1060	818	1250	1220	723	348	761	1220	878	683	673	840
25	1080	799	---	1220	721	347	711	1270	871	696	679	835
26	1080	789	1240	1220	757	342	738	1300	1050	699	679	830
27	1110	817	1350	1220	702	362	755	1360	1000	715	676	849
28	1110	828	1380	1210	596	353	755	1410	1040	734	---	861
29	1150	830	1380	1220	595	341	765	1440	990	751	702	891
30	1150	904	1380	1230	---	380	761	1450	988	768	705	925
31	1190	---	1380	1220	---	434	---	1440	---	821	708	---
MONTH	1090	771	1130	1290	626	684	648	1080	1030	854	781	794
YEAR	MAX	1550	MIN	317	MEAN	901						

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.5	6.0	1.0	0.0	0.0	0.0	5.0	11.0	18.0	19.0	22.0	21.0
2	11.5	6.0	1.0	0.0	0.0	0.0	5.5	12.0	20.5	18.5	24.0	20.0
3	12.0	5.0	1.0	0.0	0.0	0.0	5.5	10.5	19.0	20.0	24.5	20.0
4	13.0	5.5	1.0	0.0	0.0	0.0	6.0	11.5	18.0	---	23.5	18.0
5	13.5	6.5	1.0	0.0	0.0	0.0	6.0	11.5	19.0	20.0	20.5	19.0
6	11.5	6.0	1.0	0.0	0.0	0.0	8.0	11.0	21.0	23.0	22.5	20.0
7	11.0	5.5	1.0	0.0	0.0	0.0	8.5	13.0	19.5	23.0	22.5	18.5
8	9.0	5.0	1.0	0.0	0.0	0.0	9.0	15.0	20.0	23.0	23.0	17.0
9	8.5	4.0	1.0	0.0	1.0	0.0	10.5	17.0	21.5	24.0	22.0	15.5
10	7.5	3.0	1.0	0.0	0.5	0.0	11.0	15.5	22.0	23.0	22.0	18.0
11	7.5	3.0	0.0	0.0	1.0	0.0	10.5	17.0	19.5	24.0	21.0	17.0
12	8.0	2.0	0.0	0.0	1.0	0.0	11.0	14.0	19.0	23.5	22.5	18.0
13	7.5	1.0	0.0	0.0	1.0	0.0	13.5	16.0	19.0	22.0	22.5	18.0
14	7.0	1.0	0.0	0.0	1.0	0.0	12.0	16.0	16.0	21.0	23.5	18.0
15	7.0	2.5	0.5	0.0	1.0	0.0	14.5	16.0	16.0	20.5	23.5	19.0
16	7.0	3.0	0.5	0.0	1.0	1.0	13.0	19.0	18.0	23.0	23.0	18.0
17	7.0	2.0	0.5	0.0	1.0	1.0	10.0	16.0	17.5	21.5	22.5	19.5
18	7.0	2.0	0.0	0.0	0.5	1.0	9.5	16.0	17.0	23.0	23.0	18.0
19	7.0	1.0	0.0	0.0	0.5	1.0	---	16.0	18.0	24.0	21.0	17.0
20	7.5	1.0	0.0	0.0	0.5	1.0	10.0	17.0	23.0	24.0	22.5	18.0
21	7.0	1.0	0.0	0.0	1.5	0.5	9.0	15.5	18.0	23.5	19.5	15.5
22	7.0	1.0	0.0	0.0	1.5	1.0	11.0	20.0	16.0	22.5	20.0	17.0
23	7.0	0.0	0.0	0.0	1.5	2.5	9.0	18.0	17.0	22.5	23.0	15.0
24	6.0	0.5	0.0	0.0	1.0	2.0	9.0	21.0	18.0	23.0	22.0	15.5
25	6.5	0.5	---	0.0	1.0	2.0	9.0	17.5	17.5	24.0	22.0	16.0
26	6.0	0.5	0.0	0.0	0.5	2.0	10.5	16.0	17.0	24.0	19.0	15.5
27	4.0	1.5	0.0	0.0	1.0	3.0	10.0	17.5	15.0	22.0	19.0	13.5
28	4.0	1.5	0.0	0.0	0.5	3.0	9.5	17.5	17.0	22.5	---	13.5
29	5.5	1.5	0.0	0.0	1.0	3.0	10.0	17.0	21.0	23.0	21.5	13.5
30	4.5	1.0	0.0	0.0	---	4.0	10.0	19.5	17.0	21.5	20.0	14.0
31	6.0	---	0.0	0.0	---	5.5	---	18.5	---	21.5	19.0	---
MONTH	8.0	2.5	0.5	0.0	0.5	1.0	9.5	16.0	18.5	22.5	22.0	17.0
YEAR	MAX	24.5	MIN	0.0	MEAN	10.0						

06174000 WILLOW CREEK NEAR GLASGOW, MT

LOCATION.--Lat 48°06'52", long 106°40'15", in SW¼NW¼NE¼ sec.10, T.27 N., R.39 E., Valley County, Hydrologic Unit 10050012, on right bank 5.8 mi (9.3 km) south of Glasgow and 10.6 mi (17.1 km) upstream from mouth.

DRAINAGE AREA.--538 mi^2 (1,393 km^2)

PERIOD OF RECORD.--October 1953 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,110 ft (640 m), by barometer.

REVISED RECORDS.--WSP 1729: Drainage area. WSP 1916: 1960.

REMARKS.--Records poor. There are now more than 270 storage and detention reservoirs upstream. Water-spreader irrigation of about 5,000 acres (20.2 km^2) of hay or pasture lands to extent of available flow.

AVERAGE DISCHARGE.--23 years, 57.9 ft^3/s (1.640 m^3/s), 41,900 acre-ft/yr (51.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,400 ft^3/s (351 m^3/s) July 14, 1962, gage height, 21.70 ft (6.614 m); maximum gage height, 23.0 ft (7.01 m) June 21, 1974; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,020 ft^3/s (85.5 m^3/s) July 3, gage height, 19.79 ft (6.032 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	15		0	50	0	42		0	35	.60	1.1
2	0	15		0	40	0	35		0	403	0	.80
3	0	16		0	30	0	29		0	2240	0	0
4	0	15		0	27	0	21		0	1970	0	0
5	0	15		0	24	0	17		0	1300	.60	0
6	0	15		0	21	0	14		0	1300	41	0
7	0	12		0	16	0	10		0	601	7.2	.80
8	.30	10		0	14	0	9.5		15	372	30	.50
9	.10	7.0		0	12	0	8.8		110	174	159	.20
10	90	5.5		0	10	0	7.0		59	131	226	0
11	47	4.0		0	8.0	0	5.0		35	557	210	0
12	32	3.5		0	6.0	0	4.0		53	770	240	0
13	54	2.7		0	4.5	1.0	3.0		49	652	204	0
14	230	2.2		0	3.5	5.0	2.0		61	477	200	0
15	700	1.5		0	2.5	20	1.0		514	282	133	0
16	340	.60		0	1.5	250	.70		154	154	60	0
17	179	.20		0	1.5	1200	.50		96	102	41	0
18	108	0		0	1.5	1150	.20		91	77	29	0
19	71	0		0	1.5	1140	0		74	61	21	0
20	69	0		0	1.0	937	0		54	49	17	0
21	57	0		0	1.2	602	0		43	42	13	0
22	37	0		0	2.0	479	0		331	39	10	0
23	29	0		0	3.0	392	0		1130	27	6.0	0
24	24	0		0	4.0	310	0		853	21	5.3	0
25	22	0		0	5.0	237	0		543	15	3.6	0
26	22	0		0	3.0	190	0		178	12	3.4	0
27	20	0		0	2.0	150	0		114	8.5	3.2	0
28	18	0		2.0	1.0	120	0		81	5.0	1.5	0
29	18	0		5.0	.50	91	0		60	4.0	1.7	0
30	17	0		11	---	66	0		44	3.2	2.4	0
31	15	---		25	---	54	---		---	1.7	2.0	---
TOTAL	2199.40	140.20	0	43.0	297.20	7394.0	209.70	0	4359	12169.7	1775.50	3.20
MEAN	70.9	4.67	0	1.39	10.2	239	6.99	0	145	393	57.2	.11
MAX	700	16	0	25	50	1200	42	0	1130	2240	260	1.1
MIN	0	0	0	0	.50	0	0	0	0	1.7	0	0
AC-FT	4360	276	0	85	589	14670	416	0	8650	24140	3520	6.3

CAL YR 1975 TOTAL 24092.44 MEAN 66.0 MAX 1700 MIN 0 AC-FT 47790
WTR YR 1976 TOTAL 28586.90 MEAN 78.1 MAX 2240 MIN 0 AC-FT 56710

06174500 MILK RIVER AT NASHUA, MT

LOCATION.--Lat 48°07'52", long 106°21'50", in NE¼NE¼ sec.1, T.27 N., R.41 E., Valley County, Hydrologic Unit 10050012, on right bank at downstream side of former highway bridge site, 0.6 mi (1.0 km) southwest of Nashua, 2.0 mi (3.2 km) upstream from Porcupine Creek, and at mile 24.0 (38.6 km).

DRAINAGE AREA.--22,332 mi^2 (57,840 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1939 to current year.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,027.75 ft (618.058 m) above mean sea level.

REMARKS.--Water-discharge records good except those for winter period, which are poor. Flow increased during irrigation season by water from St. Mary Canal which diverts from the St. Mary River near Babb (see p.31). Flow regulated by Fresno Reservoir (see p.582), two reservoirs in Lodge Creek basin in Saskatchewan (see p. 180), and four reservoirs in Frenchman River basin in Saskatchewan (see p. 207-208). Diversions for irrigation of about 140,000 acres (567 km^2) above station.

AVERAGE DISCHARGE.--37 years, 709 ft^3/s (20.08 m^3/s) 513,700 acre-ft/yr (633 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,300 ft^3/s (1,280 m^3/s) Apr. 18, 1952, gage height, 31.38 ft (9.565 m); minimum, 0.6 ft^3/s (0.017 m^3/s) July 15, 1961, gage height, 1.96 ft (0.597 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,240 ft^3/s (262 m^3/s) Mar. 23, gage height, 20.20 ft (6.157 m); minimum daily, 83 ft^3/s (2.29 m^3/s) May 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	296	674	400	360	600	430	5040	583	118	281	127	403
2	220	760	420	360	600	410	4310	505	141	281	124	391
3	182	802	430	340	780	390	3980	446	155	1980	127	350
4	194	840	420	330	760	380	3620	397	186	4200	121	323
5	196	1090	430	310	660	370	3300	307	229	4550	114	323
6	198	1250	440	290	520	380	2570	190	224	3920	114	333
7	194	1030	420	270	400	410	2000	141	281	3130	207	350
8	203	850	400	250	360	420	1580	114	367	2150	478	356
9	216	732	360	230	370	420	1420	127	492	1280	674	345
10	216	732	360	240	350	420	1510	198	930	825	753	323
11	247	865	350	250	370	410	1700	261	1680	620	814	291
12	271	882	340	270	390	390	1610	271	1770	1450	825	238
13	236	850	320	280	410	400	1750	233	1070	2600	878	247
14	252	830	310	290	430	400	1420	220	583	2310	894	276
15	590	820	300	280	430	400	1080	178	697	2470	938	276
16	1050	814	290	300	430	430	998	141	698	2520	814	261
17	994	753	280	320	420	450	1040	108	802	1930	711	238
18	850	598	290	330	410	560	1050	85	760	1630	790	198
19	746	547	310	340	400	900	962	85	910	1490	753	190
20	658	540	320	340	390	1700	660	83	820	1120	598	198
21	598	547	340	340	380	2900	498	85	658	732	519	207
22	612	433	380	330	370	4500	257	96	666	860	512	203
23	576	433	360	330	380	8000	224	96	970	1110	492	211
24	427	440	360	310	410	8990	276	88	1760	1070	478	216
25	328	450	370	300	450	6640	554	99	1640	922	452	243
26	307	460	380	290	480	8210	682	88	1080	802	397	266
27	333	450	370	300	500	7750	697	85	1110	697	367	257
28	373	440	370	300	500	7360	666	131	1160	446	409	252
29	409	420	370	310	470	6950	643	127	1020	233	427	238
30	512	390	370	340	---	6550	612	108	690	178	421	247
31	635	---	370	400	---	5920	---	105	---	144	409	---
TOTAL	13123	20722	11250	9530	13620	85840	47309	5781	23867	47931	15737	8250
MEAN	423	691	363	307	470	2769	1577	186	796	1546	508	275
MAX	1050	1250	440	400	800	8990	5040	583	1770	4550	938	403
MIN	182	390	280	230	350	370	224	83	118	144	114	190
AC-FT	26030	41100	22310	16900	27020	170300	93840	11470	47340	95070	31210	16360

CAL YR 1975 TOTAL 431365 MEAN 1182 MAX 8210 MIN 70 AC-FT 855600
WTR YR 1976 TOTAL 302960 MEAN 828 MAX 8990 MIN 83 AC-FT 600900

06174500 MILK RIVER AT NASHUA, MT--Continued
(National Stream Quality Accounting Network)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-53, 1959 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1974 to current year.
WATER TEMPERATURES: January 1974 to current year.

REMARKS: Flow regulated by reservoirs and diversions for irrigation upstream from station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,030 micromhos on several days in January 1974; minimum daily, 246 micromhos Apr. 14, 1974.
WATER TEMPERATURES: Maximum daily, 27.0°C July 20, 21, 1974; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,460 micromhos Dec. 29-31; minimum daily, 332 micromhos Mar. 24, 25.
WATER TEMPERATURES: Maximum daily, 25.0°C July 20, Aug. 1, 3, 5; minimum daily, 0.0°C on many days during December to March.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	FECAL COLIFORM (COL. PER 100 ML)	FECAL STREPTOCOCCI KF AGAR (COL. PER 100 ML)
OCT											
23...	1500	583	1300	8.3	9.0	7.0	75	10.2	90	110	51
NOV											
19...	1400	547	810	8.5	4.0	1.0	20	12.9	98	37	14
DEC											
09...	1300	380	990	8.2	9.0	.5	10	11.7	88	56	14
JAN											
23...	1400	330	1430	7.9	.5	.5	5	10.9	82	120	18
FEB											
17...	1400	550	570	7.5	2.0	.5	180	8.5	63	15	150
MAR											
23...	1400	7370	365	7.8	9.0	.5	900	7.2	54	140	540
APR											
08...	1500	1500	565	8.2	21.0	10.0	190	8.4	80	55	40
MAY											
12...	1400	271	910	8.3	16.0	16.5	25	7.8	86	30	4
JUN											
22...	1430	674	920	8.2	19.5	20.5	120	7.2	86	160	280
JUL											
20...	1400	1100	870	8.2	26.5	25.0	180	7.0	92	340	310
AUG											
18...	1300	547	860	8.3	26.0	22.5	310	6.8	84	220	240
SEP											
22...	1300	198	860	8.9	13.5	15.0	7	8.4	89	60	390

DATE	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)
OCT											
23...	260	110	59	28	170	4.6	6.9	192	0	1.5	450
NOV											
19...	220	0	51	23	85	2.5	5.0	271	5	1.4	170
DEC											
09...	280	48	65	28	110	2.9	5.5	280	0	2.8	250
JAN											
23...	410	80	93	43	160	3.4	7.5	401	0	8.1	410
FEB											
17...	130	38	30	14	65	2.5	7.0	115	0	5.8	170
MAR											
23...	87	3	21	8.4	40	1.9	5.0	102	0	2.6	85
APR											
08...	150	22	30	18	61	2.2	6.9	155	0	1.6	140
MAY											
12...	260	30	59	28	110	3.0	7.8	284	0	2.3	240
JUN											
22...	230	39	54	23	120	3.4	6.9	232	0	2.3	260
JUL											
20...	190	36	45	20	110	3.4	7.4	194	0	2.0	250
AUG											
18...	230	37	51	24	100	2.9	6.6	231	0	1.9	230
SEP											
22...	240	25	63	25	100	2.8	5.5	244	6	.5	210

06174500 MILK RIVER AT NASHUA, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT											
23...	13	.3	5.8	861	1.17	1360	.02	1.4	1.4	.14	--
NOV											
19...	14	.3	4.0	512	.70	756	.03	1.2	1.2	.05	--
DEC											
09...	16	.4	6.6	654	.89	671	.15	.76	.91	.04	6.3
JAN											
23...	25	.4	8.9	958	1.30	854	.39	.87	1.3	.05	--
FEB											
17...	6.7	.2	5.8	348	.47	517	.30	2.0	2.3	.35	--
MAR											
23...	4.0	.2	4.1	249	.34	4960	.26	4.3	4.6	.88	34
APR											
08...	7.1	.2	6.1	361	.49	1460	.18	.05	.23	.40	--
MAY											
12...	17	.3	6.0	629	.86	460	.09	1.1	1.2	.11	--
JUN											
22...	11	.3	7.0	621	.84	1130	.14	.88	1.0	.26	9.0
JUL											
20...	11	.3	5.5	544	.74	1620	.04	.85	.89	.35	--
AUG											
18...	13	.3	6.6	561	.76	829	.01	.61	.62	.37	--
SEP											
22...	18	.3	4.3	548	.75	293	.02	.77	.79	.10	8.6

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
DEC												
09...	1300	1	0	<10	1	10	<10	<50	1	<10	2	570
MAR												
23...	1400	42	1	10	1	60	0	<50	0	80	6	59000
JUN												
22...	1430	7	1	7	0	<10	<10	5	0	20	10	7700
SEP												
22...	1300	2	2	<10	0	0	0	<50	0	<10	4	840

DATE	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
DEC											
09...	0	<100	3	70	40	.0	.0	1	0	20	10
MAR											
23...	180	100	3	1200	40	.1	.0	2	0	390	20
JUN											
22...	20	48	2	260	2	<.5	<.5	0	0	50	8
SEP											
22...	10	100	4	140	10	.0	.0	1	1	30	4

06174500 MILK RIVER AT NASHUA, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
956	1060	883	1400	1240	686	398	822	1220	1030	814	760
970	1180	900	1420	1030	618	445	819	1210	1050	832	775
989	1180	876	1420	914	597	499	830	1280	960	852	789
990	1270	882	1400	928	622	567	833	1330	601	869	794
1020	926	930	1380	930	709	651	848	1340	766	874	794
1020	817	970	1370	695	770	597	866	1310	889	893	794
1040	722	882	1380	622	841	569	870	1260	750	910	801
1070	728	953	1370	593	850	553	878	1260	911	931	789
1070	714	957	1370	570	872	568	910	1400	899	990	780
1090	701	979	1400	639	894	620	937	1360	860	1040	775
1100	696	988	1390	703	906	568	963	1240	870	891	781
1110	724	1090	1380	619	925	560	963	1090	825	851	781
1110	693	1100	1380	536	921	557	1030	969	467	828	791
1080	705	1130	1380	519	932	532	1080	851	590	851	794
1080	718	1140	1380	517	940	551	1040	800	748	754	800
1030	783	1160	1360	509	930	619	1100	860	839	791	800
1010	783	1170	1360	541	935	612	1100	1070	653	762	824
1040	799	1210	1360	523	929	608	1070	963	752	750	862
1000	800	1250	1360	502	870	618	1070	1020	857	762	869
1100	770	1280	1370	516	539	608	1080	931	851	762	945
1210	770	1330	1360	549	521	621	1110	939	871	761	871
1180	891	1360	1360	558	499	650	1120	982	880	758	869
1310	830	1330	1350	556	357	668	1140	982	839	768	880
1040	831	1280	1340	570	332	621	1170	842	709	768	897
1120	811	1270	1340	600	332	797	1170	936	679	762	902
1050	809	1280	1320	673	361	860	1180	920	731	756	912
1040	833	1330	1310	604	350	858	1180	903	689	760	900
1170	828	1420	1310	638	351	770	1210	903	731	764	912
1120	880	1460	1310	679	367	759	1230	1090	741	768	909
1120	895	1460	1300	---	349	786	1220	990	701	765	930
1130	---	1460	1290	---	355	---	1250	---	806	755	---
1080	838	1150	1360	658	660	623	1040	1080	794	819	835

MAX 1460 MIN 332 MEAN 913

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
13.0	4.5	0.5	0.0	0.0	0.0	4.5	11.0	22.0	20.0	25.0	18.5
13.5	4.5	0.5	0.0	0.0	0.0	4.5	11.0	21.0	20.5	23.0	18.5
13.0	4.5	0.5	0.0	0.0	0.0	5.0	11.0	22.0	19.5	25.0	19.0
14.0	5.0	0.5	0.0	0.0	0.0	5.5	12.5	22.0	18.5	24.0	18.0
13.5	5.5	0.5	0.0	0.0	0.0	5.5	12.0	22.0	20.5	25.0	18.0
12.0	5.0	0.5	0.0	0.0	0.0	6.5	13.0	22.5	22.0	22.5	19.0
12.0	5.5	0.5	0.0	0.0	0.0	7.5	13.0	21.0	21.5	23.0	18.5
11.0	4.5	0.5	0.0	0.0	0.0	8.5	12.5	21.0	23.0	24.0	18.0
---	3.5	0.5	0.0	0.0	0.0	10.0	15.0	22.5	24.0	23.0	16.0
7.5	3.5	0.5	0.0	0.0	0.0	11.0	16.5	24.0	24.5	22.5	16.0
8.0	3.0	0.5	0.0	0.0	0.0	10.0	18.0	17.5	24.0	21.5	16.0
8.5	1.5	0.5	0.0	0.0	0.0	11.0	15.0	22.5	23.5	21.0	16.5
8.0	1.5	0.0	0.0	0.0	0.0	12.0	15.0	20.5	20.0	21.0	16.0
7.0	1.0	0.0	0.0	0.0	0.0	11.5	16.5	20.5	21.5	20.5	16.5
---	0.5	0.0	0.0	0.0	0.0	12.5	15.5	18.5	21.5	20.5	17.0
6.5	0.5	0.0	0.0	0.0	0.0	13.0	15.5	20.0	22.0	20.5	18.0
6.5	0.5	0.0	0.0	0.0	0.0	11.0	16.0	18.0	21.5	20.0	18.0
6.0	0.5	0.0	0.0	0.0	0.0	10.5	17.5	18.5	23.0	20.5	19.0
6.0	0.5	0.0	0.0	0.0	0.0	10.5	18.5	19.5	24.0	21.0	16.5
6.5	0.5	0.0	0.0	0.0	0.0	9.5	18.5	21.0	23.5	21.5	16.0
6.0	0.5	0.0	0.0	0.0	0.0	9.5	18.5	21.0	23.5	21.5	15.5
6.0	0.5	0.0	0.0	0.0	0.0	10.0	19.0	20.0	23.5	20.5	16.0
6.0	0.5	0.0	0.0	0.0	0.0	9.5	19.5	19.5	23.0	20.5	14.5
6.5	0.5	0.0	0.0	0.0	0.0	9.0	19.5	17.0	23.5	20.0	15.0
6.0	0.5	0.0	0.0	0.0	0.0	9.5	18.0	17.5	24.0	20.0	14.5
5.5	0.5	0.0	0.0	0.0	2.0	9.5	18.0	17.0	24.0	19.5	15.5
5.0	0.5	0.0	0.0	0.0	3.0	9.5	---	17.0	24.5	19.5	12.5
5.5	0.5	0.0	0.0	0.0	3.0	9.5	---	18.0	23.0	19.0	12.5
5.0	0.5	0.0	0.0	0.0	3.0	9.5	20.0	18.5	23.0	19.5	13.0
5.0	0.5	0.0	0.0	---	3.0	9.5	17.5	19.0	22.0	19.0	13.5
4.5	---	0.0	0.0	---	3.5	---	18.5	---	22.0	19.5	---
8.0	2.0	0.0	0.0	0.0	0.5	9.0	16.0	20.0	22.5	21.5	16.5

MAX 25.0 MIN 0.0 MEAN 9.5

06174500 MILK RIVER AT NASHUA, MT--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .062 MM
OCT						
23...	1500	7.0	583	157	247	98
NOV						
19...	1400	1.0	547	88	130	92
DEC						
09...	1300	.5	380	45	46	75
JAN						
23...	1400	.5	330	61	54	69
FEB						
17...	1400	.5	550	236	350	97
MAR						
23...	1400	.5	7370	2650	5270	96
APR						
08...	1500	10.0	1500	474	1920	97
MAY						
12...	1400	16.5	271	50	37	95
JUN						
22...	1430	20.5	674	396	721	97
JUL						
20...	1400	25.0	1100	489	1450	99
AUG						
18...	1300	22.5	547	604	892	100
SEP						
22...	1300	15.0	198	33	18	97

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
OCT. 23, 1975
1500 HOURS
8,800 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		800	9	
	....WESTELLA		530	6	
	...SCENEDESMACEAE				
L	....ACTINASTRUM			0	
	....SCENEDESMUS		270	3	
		TOTALS	1,600	18	1.459=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		270	3	
L	....MELOSIRA			0	
	..PENNALES	PENNATE			
	...NITZSCHIACEAE				
	....NITZSCHIA		930	11	
		TOTALS	1,200	14	0.764=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...NOSTOCACEAE				
L	....ANABAENA			0	
D	....APHANIZOMENON		1,600	18	
	...OSCILLATORIACEAE				
D	....LYNGBYA		4,300	48	
L	....OSCILLATORIA			0	
		TOTALS	5,900	66	0.845=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
	....TRACHELOMONAS		130	2	
		TOTALS	130	2	0.000=DIVERSITY

NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:

PHYL/DIV 1.321
CLASS 1.321
ORDER 1.425
FAMILY 2.107
GENERA 2.254

06174500 MILK RIVER AT NASHUA, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
NOV. 19, 1975
1400 HOURS
17,000 CELLS/ML

	ORGANISM NAME	COMMON NAME		CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE				
	.CHLOROPHYCEAE					
	..CHLOROCOCCALES					
	...OOCYSTACEAE					
	....ANKISTRODESMUS			360	2	
	...SCENEDESMACEAE					
	....SCENEDESMUS			720	4	
			TOTALS	1,100	6	0.918=DIVERSITY
	CHRYSOPHYTA					
	.BACILLARIOPHYCEAE	DIATOMS				
	..CENTRALES	CENTRIC				
	...COSCINODISCACEAE					
D	....CYCLOTELLA			15,000	89	
	..PENNALES	PENNATE				
	...NITZSCHIACEAE					
	....NITZSCHIA			720	4	
	...SURIRELLACEAE					
	....SURIRELLA			180	1	
			TOTALS	16,000	94	0.347=DIVERSITY

PHYL/DIV 0.335
CLASS 0.335
ORDER 0.623
FAMILY 0.717
GENERA 0.717

DEC. 9, 1975
1300 HOURS
3,500 CELLS/ML

	ORGANISM NAME	COMMON NAME		CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE				
	.CHLOROPHYCEAE					
	..CHLOROCOCCALES					
	...OOCYSTACEAE					
L	....ANKISTRODESMUS				0	
	...SCENEDESMACEAE					
	....SCENEDESMUS			220	6	
			TOTALS	220	6	0.000=DIVERSITY
	CHRYSOPHYTA					
	.BACILLARIOPHYCEAE	DIATOMS				
	..CENTRALES	CENTRIC				
	...COSCINODISCACEAE					
D	....CYCLOTELLA			2,300	66	
			TOTALS	2,300	66	0.000=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE				
	.MYXOPHYCEAE					
	..OSCILLATORIALES	FILAMENTOUS				
	...NOSTOCACEAE					
L	....ANABAENA				0	
	...OSCILLATORIACEAE					
D	....OSCILLATORIA			890	25	
			TOTALS	890	25	0.000=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS				
	.EUGLENOPHYCEAE					
	..EUGLENALES					
	...EUGLENACEAE					
	....EUGLENA			110	3	
			TOTALS	110	3	0.000=DIVERSITY

PHYL/DIV 1.305
CLASS 1.305
ORDER 1.305
FAMILY 1.305
GENERA 1.305

06174500 MILK RIVER AT NASHUA, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
JAN. 23, 1976
1400 HOURS
220 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLORORHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
D	....ANKISTRODESMUS		41	19	
L	....DICTYOSRHAERIUM			0	
	...SCENEDESMACEAE				
D	....SCENEOESMUS		33	15	
L	....TETRASTRUM			0	
		TOTALS	75	34	0.991=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..RENNALES	PENNATE			
	...FRAGILARIACEAE				
	....SYNEORA		8	4	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		25	12	
	...NAVICULACEAE	NAVICULOID			
L	....NAVICULA			0	
	...NITZSCHIACEAE				
	....NITZSCHIA		17	8	
	...SURIRELLACEAE				
L	....SURIRELLA			0	
		TOTALS	50	24	1.459=OIVERSITY
	EUGLENORHYTA	EUGLENOIOS			
	.CRYPTORHYCEAE	CRYRTOMONAOS			
	..CRYRTOMONIOALES				
	...CRYRTOMONOOACEAE				
D	....CRYPTOMONAS		83	38	
		TOTALS	83	38	0.000=DIVERSITY
	PYRRHORHYTA	FIRE ALGAE			
	.DINOPHYCEAE	OINOFLAGELLATES			
	..PERIOINIALES				
	...GLENODINIACEAE				
	....GLENOOINIUM		8	4	
		TOTALS	8	4	0.000=OIVERSITY

RHYL/OIV 1.729
CLASS 1.729
ORDER 1.729
FAMILY 2.409
GENERA 2.409

FEB. 17, 1976
1400 HOURS
4,800 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLORORHYTA	GREEN ALGAE			
	.CHLORORHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
D	....ANKISTRODESMUS		4,300	89	
		TOTALS	4,300	89	0.000=OIVERSITY
	CHRYSOPHYTA				
	.BACILLARIORHYCEAE	OIATOMS			
	..RENNALES	RENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		100	2	
	...FRAGILAPIACEAE				
L	....SYNEORA			0	
	...NAVICULACEAE	NAVICULOIO			
L	....NAVICULA			0	
	...NITZSCHIACEAE				
	....NITZSCHIA		310	6	
	...SURIRELLACEAE				
	....SURIRELLA		100	2	
		TOTALS	510	10	1.371=OIVERSITY

PHYL/OIV 0.489
CLASS 0.489
ORDER 0.489
FAMILY 0.635
GENERA 0.635

06174500 MILK RIVER AT NASHUA, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

MAR. 23, 1976
1400 HOURS
3,200 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		290	9	
		TOTALS	290	9	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		860	27	
	..PENNALES	PENNATE			
	...DIATOMACEAE				
	....DIATOMA		290	9	
	...GOMPHONEMATACEAE				
L	....GOMPHONEMA			0	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		860	27	
	...NITZSCHIACEAE				
D	....NITZSCHIA		860	27	
		TOTALS	2,900	90	1.895=DIVERSITY

PHYL/DIV 0.439
CLASS 0.439
ORDER 1.241
FAMILY 2.163
GENERA 2.163

APR. 8, 1976
1500 HOURS
1,600 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
D	....ANKISTRODESMUS		270	17	
		TOTALS	270	17	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		360	22	
	....MELOSIRA		89	6	
	..PENNALES	PENNATE			
	...CYMBELLACEAE				
	....CYMBELLA		89	6	
	...FRAGILARIACEAE				
	....SYNEDRA		180	11	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		180	11	
	...NITZSCHIACEAE				
	....NITZSCHIA		89	6	
		TOTALS	980	62	2.369=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..CHROOCOCCALES	COCCOID			
	...CHROOCOCCACEAE				
	....ANACYSTIS		180	11	
		TOTALS	180	11	0.000=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
	....EUGLENA		180	11	
		TOTALS	180	11	0.000=DIVERSITY

PHYL/DIV 1.569
CLASS 1.569
ORDER 2.177
FAMILY 2.816
GENERA 3.017

06174500 MILK RIVER AT NASHUA, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAY 12, 1976
1430 HOURS
27,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		1,600	6	
D	....DICTYOSPHAERIUM		7,300	27	
	....KIRCHNERIELLA		1,100	4	
	....DOCYSTIS		150	1	
	....TETRAEDRON		310	1	
	...SCENEDESMACEAE				
D	....ACTINASTRUM		8,500	32	
	....SCENEDESMUS		1,100	4	
		TOTALS	20,000	75	1.951=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		700	3	
	..PENNALES	PENNATE			
	...NAVICULACEAE	NAVICULOID			
L	....STAURONEIS			0	
	...NITZSCHIACEAE				
	....NITZSCHIA		390	1	
		TOTALS	1,200	4	1.231=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
	..CHRYSOMONADALES				
	...OCHROMONADACEAE				
L	....OCHROMONAS			0	
		TOTALS	77	0	0.000=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..CHROOCOCCALES	COCCOID			
	...CHROOCOCCACEAE				
	....ANACYSTIS		930	3	
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
D	....OSCILLATORIA		4,300	16	
		TOTALS	5,300	19	0.672=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
L	....PHACUS			0	
	....TRACHELOMONAS		230	1	
		TOTALS	310	1	0.811=DIVERSITY

PHYL/DIV 1.055
CLASS 1.070
ORDER 1.244
FAMILY 2.001
GENERA 2.721

06174500 MILK RIVER AT NASHUA, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
JUNE 22, 1976
1430 HOURS
6,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		430	7	
L	....CLOSTERIOPSIS			0	
	...SCENEDESMACEAE				
D	....ACTINASTRUM		3,700	62	
	....SCENEDESMUS		280	5	
		TOTALS	4,400	74	0.794=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		280	5	
	..PENNALES	PENNATE			
	...NITZSCHIACEAE				
D	....NITZSCHIA		1,100	19	
		TOTALS	1,400	24	0.722=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
	....TRACHELOMONAS		140	2	
		TOTALS	140	2	0.000=DIVERSITY

PHYL/DIV 0.945
CLASS 0.945
ORDER 1.117
FAMILY 1.455
GENERA 1.703

06174500 MILK RIVER AT NASHUA, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
JULY 20, 1976
1400 HOURS
12,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...CHARACIACEAE				
	....SCHROEDERIA		81	1	
	...COELASTRACEAE				
L	....COELASTRUM			0	
	...MICRACTINIACEAE				
D	....MICRACTINIUM		2,100	17	
	...OOCYSTACEAE				
	....ANKISTRODESMUS		400	3	
	....DICTYOSPHAERIUM		1,300	11	
	....KIRCHNERIELLA		240	2	
	...SCENEDESMACEAE				
L	....ACTINASTRUM			0	
	....CRUCIGENIA		890	7	
	....SCENEDESMUS		970	8	
	....TETRASTRUM		970	8	
		TOTALS	7,000	57	2.628=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		160	1	
D	....MELOSIRA		3,200	26	
	..PENNALES	PENNATE			
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		81	1	
	...NITZSCHIACEAE				
	....NITZSCHIA		1,100	9	
		TOTALS	4,500	37	1.123=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...NOSTOCACEAE				
	....ANABAENA		320	3	
	...OSCILLATORIACEAE				
	....OSCILLATORIA		490	4	
		TOTALS	810	7	0.971=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
L	....EUGLENA			0	
	....PHACUS		81	1	
		TOTALS	81	1	0.000=DIVERSITY

PHYL/DIV 1.302
CLASS 1.302
ORDER 1.598
FAMILY 2.623
GENERA 3.258

06174500 MILK RIVER AT NASHUA, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
SEP. 22, 1976
1300 HOURS
1,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		51	5	
		TOTALS	51	5	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...NAVICULACEAE	NAVICULOID			
L	....GYROSIGMA			0	
D	....NAVICULA		200	20	
	...NITZSCHIACEAE				
D	....NITZSCHIA		770	75	
		TOTALS	970	95	0.742=DIVERSITY

PHYL/DIV 0.286
CLASS 0.286
ORDER 0.286
FAMILY 0.992
GENERA 0.992

AUG. 18, 1976
1300 HOURS
19,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...SCENEDESMACEAE				
	....ACTINASTRUM		130	1	
L	....SCENEDESMUS			0	
		TOTALS	160	1	0.722=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...FRAGILARIACEAE				
L	....SYNEDRA			0	
	...NAVICULACEAE	NAVICULOID			
L	....NAVICULA			0	
	...NITZSCHIACEAE				
L	....NITZSCHIA			0	
	...SURIRELLACEAE				
L	....CYMATOPLEURA			0	
		TOTALS	110	0	1.842=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..CHROOCOCCALES	COCCOID			
	...CHROOCOCCACEAE				
	....ANACYSTIS		200	1	
	..OSCILLATORIALES	FILAMENTOUS			
	...NOSTOCACEAE				
	....ANABAENA		770	4	
	....ANABAENOPSIS		160	1	
	...OSCILLATORIACEAE				
D	....OSCILLATORIA		18,000	92	
		TOTALS	19,000	98	0.397=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
L	....EUGLENA			0	
		TOTALS	63	0	0.000=DIVERSITY

PHYL/DIV 0.150
CLASS 0.150
ORDER 0.234
FAMILY 0.519
GENERA 0.556

06175540 PRAIRIE ELK CREEK NEAR OSWEGO, MT

LOCATION.--Lat 47°59'56", long 105°52'00", in SE¼SE¼ sec.14, T.26 N., R.45 E., McCone County, Hydrologic Unit 10060001, on left bank 75 ft (23 m) downstream from bridge on FAS 528, 1.0 mi (1.6 km) upstream from mouth and 4 mi (6 km) south of Oswego.

DRAINAGE AREA.--352 mi^2 (912 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1975 to September 1976.

GAGE --Water-stage recorder. Altitude of gage is 2,180 ft (664 m), from topographic map.

REMARKS.--Water-discharge records poor. Diversions for irrigation of about 230 acres (931,000 m^2) above station of which 170 acres (688,000 m^2) is flood irrigated. Some storage in stock ponds upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,480 ft^3/s (41.9 m^3/s) June 13, gage height, 5.20 ft (1.585 m); minimum daily, 0.6 ft^3/s (0.026 m^3/s) Jan. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	3.0	1.6	1.6	95	4.0	16	3.3	1.9	5.4	1.2	1.2
2	1.6	3.0	1.6	1.6	100	2.0	16	3.0	1.6	42	1.2	1.2
3	1.9	3.0	2.0	1.8	90	1.9	15	3.0	1.6	156	1.2	1.1
4	3.0	2.6	2.0	1.6	86	2.0	14	3.0	4.2	148	1.4	1.1
5	1.9	2.6	4.0	1.6	84	2.0	14	3.3	45	39	8.1	1.2
6	1.6	2.6	6.0	1.6	82	3.0	11	3.3	21	15	6.4	1.4
7	1.4	2.6	5.0	1.4	80	4.0	11	2.0	39	19	54	1.4
8	1.6	2.2	4.0	.60	78	4.0	11	4.2	103	10	16	1.4
9	7.6	2.0	3.0	.80	85	8.0	11	3.5	28	5.4	26	1.6
10	12	2.1	3.0	.20	80	11	11	3.3	16	4.9	36	1.4
11	7.6	2.1	2.6	1.0	78	14	11	3.5	14	120	9.7	1.6
12	4.5	2.0	2.0	1.0	74	12	11	4.2	709	27	5.9	1.6
13	7.8	2.2	2.2	1.0	66	14	8.1	4.2	959	7.0	4.0	1.6
14	142	2.5	2.0	1.4	66	13	6.2	1.6	247	4.5	3.1	1.4
15	82	3.0	1.0	1.6	70	20	7.0	3.5	117	3.5	2.4	1.4
16	26	3.0	.80	1.8	64	50	7.5	8.1	44	3.1	2.1	1.4
17	14	3.0	.60	2.0	58	150	7.5	6.9	76	2.7	1.6	1.4
18	8.1	3.0	.40	2.0	50	365	8.0	4.5	28	2.4	1.4	1.4
19	5.6	3.0	.40	2.0	42	200	8.1	2.2	16	2.1	1.6	1.4
20	4.2	2.8	1.2	2.0	35	120	8.7	1.6	12	2.4	1.4	1.4
21	3.8	2.6	2.0	2.0	32	85	8.7	2.2	9.7	2.1	1.2	1.4
22	3.8	2.6	1.2	2.0	36	65	8.7	2.2	109	2.1	1.4	1.4
23	3.5	2.4	1.0	2.0	39	52	23	1.8	87	2.1	1.1	1.6
24	3.5	2.2	1.2	2.0	41	42	18	1.4	38	1.8	.90	1.0
25	3.3	2.0	1.8	1.6	44	35	14	1.9	23	2.1	1.1	1.8
26	3.3	1.4	2.6	1.0	35	27	9.3	1.9	13	4.0	1.2	2.1
27	3.0	1.4	2.8	2.0	27	20	7.0	1.9	9.7	2.1	1.1	2.1
28	3.5	1.4	3.0	6.0	22	19	2.0	1.9	12	1.6	1.1	2.1
29	3.0	1.0	2.6	85	16	21	3.0	1.6	8.3	1.4	1.2	1.8
30	3.0	1.0	2.0	95	---	16	3.0	2.2	7.0	1.2	1.2	1.8
31	3.0	---	1.8	85	---	16	---	2.2	---	1.4	1.2	---
TOTAL	372.7	70.3	67.40	312.20	1757	1397.9	311.6	94.0	2800.0	641.3	199.40	45.3
MEAN	12.0	2.34	2.17	10.1	60.6	45.1	10.4	3.03	93.3	20.7	6.43	1.51
MAX	142	3.0	6.0	95	100	365	23	8.1	959	156	54	2.1
MIN	1.4	1.0	.40	.20	16	1.9	2.6	1.4	1.6	1.2	.90	1.1
AC-FT	739	139	134	619	3490	2770	618	186	5550	1270	396	90

WTR YR 1976 TOTAL 8069.10 MEAN 22.0 MAX 959 MIN .20 AC-FT 16010

06175540 PRAIRIE ELK CREEK NEAR OSWEGO, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1975 to September 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
14...	1430	125	720	9.1	2.5	4.0	8000	--	--	5.3	--	--
NOV												
21...	1430	2.6	2600	8.8	-3.0	.5	35	13.2	99	.8	140	0
DEC												
11...	1330	2.6	1030	8.5	-8.0	.0	750	11.4	84	3.0	63	0
JAN												
29...	1400	87	650	8.5	7.0	1.0	160	12.2	92	7.0	52	0
MAR												
03...	1400	1.9	1060	8.0	-14.0	.0	100	10.2	76	3.0	120	0
18...	1400	285	257	7.6	14.5	1.0	900	10.5	80	6.8	34	0
APR												
28...	1700	2.8	1260	8.6	12.5	11.5	3300	9.8	97	--	76	0
MAY												
27...	1500	1.9	2420	8.9	27.0	25.5	45	8.9	117	2.6	110	0
JUN												
13...	0930	1170	435	8.1	14.5	13.5	2600	7.8	80	1.4	81	0
JUL												
21...	1430	2.1	1400	9.1	35.5	30.5	40	8.7	124	2.7	120	0
AUG												
20...	1400	1.6	1510	9.0	31.0	26.0	55	8.2	109	2.8	120	0
SEP												
22...	1200	1.8	2600	8.7	18.0	16.0	40	8.9	97	1.9	110	0

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
OCT											
14...	6.3	--	--	--	--	314	0	--	--	--	--
NOV											
21...	28	17	580	21	4.5	895	51	570	7.5	1.0	8.0
DEC											
11...	15	6.1	210	12	4.8	385	0	210	4.2	.4	7.0
JAN											
29...	14	4.2	110	6.6	5.8	205	0	120	3.4	.3	3.6
MAR											
03...	28	12	190	7.6	7.0	358	0	210	16	.3	7.8
18...	8.5	3.0	43	3.2	3.0	101	0	42	4.4	.2	5.9
APR											
28...	19	6.9	260	13	4.7	415	7	270	5.0	.5	7.3
MAY											
27...	18	15	540	23	5.0	795	48	530	6.8	.9	4.2
JUN											
13...	23	5.7	66	3.2	5.6	218	0	100	5.0	.2	7.5
JUL											
21...	28	13	270	11	6.6	401	29	360	4.4	.6	6.4
AUG											
20...	27	13	300	12	7.8	443	24	380	6.3	.6	5.8
SEP											
22...	17	17	610	25	5.9	993	43	570	7.9	1.0	7.4

06175540 PRAIRIE ELK CREEK NEAR OSWEGO, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT											
14...	--	--	--	--	.35	3.0	3.3	--	1.5	340	--
NOV											
21...	1710	2.33	12.0	.01	.00	.46	.46	.47	.03	580	10
DEC											
11...	648	.88	4.55	1.0	.01	3.0	3.0	4.0	.43	210	170
JAN											
29...	363	.49	85.3	.33	.09	2.3	2.4	2.7	.16	180	380
MAR											
03...	648	.88	3.32	.09	.11	1.5	1.6	1.7	.12	200	160
18...	160	.22	123	.16	.26	4.3	4.6	4.8	.82	190	330
APR											
28...	786	1.07	5.94	2.0	.01	8.5	8.5	11	1.8	420	250
MAY											
27...	1560	2.12	8.00	.01	.03	.52	.55	.56	.08	510	40
JUN											
13...	321	.44	1010	.75	.12	4.5	4.6	5.4	2.5	60	100
JUL											
21...	916	1.25	5.22	.02	.00	.52	.52	.54	.07	300	70
AUG											
20...	983	1.34	4.25	.00	.00	.82	.82	.82	.08	350	60
SEP											
22...	1770	2.41	8.60	.01	.03	.48	.51	.52	.06	710	80

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BISMUTH (BI) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)
OCT											
14...	1430	160000	--	80	--	--	10	--	--	20	--
NOV											
21...	1430	2100	20	1	1	70	0	0	<70	<10	0
DEC											
11...	1330	--	--	7	--	--	--	--	--	<10	--
MAR											
18...	1400	42000	--	42	--	--	0	--	--	<10	--
JUN											
13...	0930	66000	--	21	--	--	10	--	--	2	--
SEP											
22...	1200	1600	--	3	--	--	0	--	--	<10	--

DATE	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED GALLIUM (GA) (UG/L)	DIS-SOLVED GER-MANIUM (GE) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)
OCT										
14...	290	--	--	490	--	--	--	250000	400	--
NOV										
21...	130	0	<35	<10	2	<20	<70	2000	<100	1
DEC										
11...	30	--	--	90	--	--	--	41000	<100	--
MAR										
18...	40	--	--	110	--	--	--	66000	<100	--
JUN										
13...	100	--	--	180	--	--	--	110000	110	--
SEP										
22...	0	--	--	<10	--	--	--	1800	<100	--

06175540 PRAIRIE ELK CREEK NEAR OSWEGO, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)
OCT										
14...	260	--	3500	--	1.7	--	1	--	550	--
NOV										
21...	160	150	130	5	.0	.0	4	5	<50	4
DEC										
11...	80	--	490	--	.1	--	--	--	100	--
MAR										
18...	60	--	1400	--	.1	--	1	--	150	--
JUN										
13...	90	--	2200	--	<.5	--	1	--	260	--
SEP										
22...	150	--	90	--	.0	--	4	--	<50	--

DATE	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED STRON-TIUM (SR) (UG/L)	DIS-SOLVED TIN (SN) (UG/L)	DIS-SOLVED TI-TANIUM (TI) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	DIS-SOLVED ZIR-CONIUM (ZR) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
14...	0	--	--	--	--	--	--	--	1000	--
NOV										
21...	0	1	<4	420	<35	<20	1.1	<50	10	10
DEC										
11...	3	--	--	--	--	--	--	--	190	--
MAR										
18...	2	--	--	--	--	--	--	--	310	--
JUN										
13...	4	--	--	--	--	--	--	--	460	--
SEP										
22...	0	--	--	--	--	--	--	--	6	--

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	DIS-SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS-PENDED GROSS ALPHA AS U-NAT. (UG/L)	DIS-SOLVED GROSS BETA AS CS-137 (PC/L)	SUS-PENDED GROSS BETA AS CS-137 (PC/L)	DIS-SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS-PENDED GROSS BETA AS SR90 /Y90 (PC/L)	DIS-SOLVED RA-226 (RADON METHOD) (PC/L)	DIS-SOLVED URANIUM (DIRECT FLUORO-METRIC) (PC/L)	TOTAL FILT-RABLE RESIDUE (MG/L)	TOTAL NON-FILT-RABLE RESIDUE (MG/L)
NOV											
21...	1430	22	2.8	12	5.8	9.6	4.8	.11	7.0	1700	96

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
OCT					
14...	1430	4.0	125	12500	4220
NOV					
21...	1430	.5	2.6	184	1.3
DEC					
11...	1330	.0	2.6	1680	12
JAN					
29...	1400	1.0	87	289	68
MAR					
18...	1400	1.0	285	3480	2680
APR					
28...	1700	11.5	2.8	5400	41
MAY					
27...	1500	25.5	1.9	153	.78
JUN					
13...	0930	13.5	1170	4950	15600
JUL					
21...	1430	30.5	2.1	90	.51
AUG					
20...	1400	26.0	1.6	120	.52
SEP					
22...	1200	16.0	1.8	98	.48

06175580 SAND CREEK NEAR WOLF POINT, MT

LOCATION.--Lat 48°00'52", long 105°42'34", in SE¼SE¼SE¼ sec.12, T.26 N., R.46 E., McCone County, Hydrologic Unit 10060001, on county road bridge, 2.8 mi (4.5 km) upstream from mouth, and 6.5 mi (10.5 km) southwest of Wolf Point.

DRAINAGE AREA.--201 mi² (521 km²).

PERIOD OF RECORD.--October 1975 to September 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT											
29...	1330	.62	1800	8.8	12.0	2.5	30	12.8	102	130	0
MAR											
20...	1200	52	360	8.3	2.0	.5	300	11.4	86	53	0
JUN											
13...	1330	165	655	8.3	15.0	16.0	1800	7.4	80	87	0
SEP											
22...	1100	.20	3040	9.2	13.0	13.0	40	8.2	85	130	0

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
OCT											
29...	26	16	390	15	5.1	646	36	410	6.6	1.0	9.8
MAR											
20...	13	5.1	52	3.1	5.2	128	0	63	3.5	.2	6.3
JUN											
13...	22	7.7	100	4.7	6.5	150	0	200	3.9	.2	8.6
SEP											
22...	16	21	700	27	6.3	755	210	640	14	2.1	6.8

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)
OCT											
29...	1220	1.66	2.04	.19	.13	.84	.97	1.2	.04	500	90
MAR											
20...	212	.29	29.8	.21	.14	2.4	2.5	2.7	.65	170	310
JUN											
13...	423	.58	188	.62	.09	3.9	4.0	4.6	1.3	110	140
SEP											
22...	1990	2.71	1.07	.02	.04	.76	.80	.82	.08	1100	100

06175580 SAND CREEK NEAR WOLF POINT, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	DISSOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)
OCT											
29...	1330	41000	90	10	2	--	0	0	1	30	0
MAR											
20...	1200	--	160	--	1	--	0	--	1	--	10
JUN											
13...	1330	42000	40	57	0	10	0	0	0	70	30
SEP											
22...	1100	--	40	--	6	--	0	--	0	--	0

DATE	TOTAL COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	DISSOLVED LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)
OCT										
29...	20	9	4900	0	1	100	90	240	100	.1
MAR										
20...	--	25	--	--	1	--	10	--	50	--
JUN										
13...	130	10	69000	60	4	60	20	1400	0	<.5
SEP										
22...	--	3	--	--	2	--	150	--	0	--

DATE	DISSOLVED MERCURY (HG) (UG/L)	TOTAL MOLYBDENUM (MO) (UG/L)	DISSOLVED MOLYBDENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DISSOLVED NICKEL (NI) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	DISSOLVED VANADIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT										
29...	.1	4	2	<50	5	2	1	3.8	30	20
MAR										
20...	--	--	--	--	5	--	--	2.7	--	70
JUN										
13...	5.3	1	2	180	8	3	0	.6	300	20
SEP										
22...	.2	--	1	--	6	--	1	.4	--	8

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
OCT					
29...	1330	2.5	.62	290	.49
MAR					
20...	1200	.5	52	1150	161
JUN					
13...	1330	16.0	165	3470	1550
SEP					
22...	1100	13.0	.20	107	.06

06177000 MISSOURI RIVER NEAR WOLF POINT, MT

LOCATION.--Lat 48°03'57", long 105°32'12", in SW¼NW¼ sec.28, T.27 N., R.48 E., McCone County, Hydrologic Unit 10060001, on right bank 500 ft (150 m) downstream from bridge on State Highway 13, 5 mi (8 km) southeast of Wolf Point, 7.8 mi (12.6 km) downstream from Wolf Creek, and at mile 1,701.4 (2,737.6 km).

DRAINAGE AREA.--82,290 mi^2 (213,131 km^2).

PERIOD OF RECORD.--September 1928 to current year.

REVISED RECORDS.--WSP 1146: 1931. WSP 1729: Drainage area.

GAGE.--Water-stage recorder and nonrecording gage. Datum of gage is 1,958.57 ft (596.972 m) above mean sea level. Prior to Apr. 13, 1930, nonrecording gages at Wolf Point ferry landing 5.5 mi (8.8 km) upstream at different datum.

REMARKS.--Records good except those for winter period, which are poor. Flow partly regulated by Fort Peck Lake (see p.152) and many other reservoirs above station. Diversions for irrigation of about 1,010,400 acres (4,090 km^2) above station.

AVERAGE DISCHARGE.--11 years (1928-39, prior to Fort Peck Lake reaching operational level), 7,219 ft^3/s (204.4 m^3/s), 5,230,000 acre-ft/yr (6.45 km^3/yr); 33 years (1943-76, after operational level was reached), 10,490 ft^3/s (2997.1 m^3/s), 7,600,000 acre-ft/yr (9.37 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 66,800 ft^3/s (1,890 m^3/s) Mar. 25, 1939, gage height, 14.4 ft (4.39 m), ice present, from rating curve extended above 39,000 ft^3/s (1,100 m^3/s); maximum gage height, 15.64 ft (4.767 m) Mar. 27, 1960 (backwater from ice); minimum daily discharge, 320 ft^3/s (9.06 m^3/s) Dec. 10, 1941.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 14, 1908, reached a stage of about 20 ft (6.1 m), present site and datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 29,900 ft^3/s (847 m^3/s) June 13, gage height, 9.29 ft (2.832 m); maximum gage height, 11.88 ft (3.621 m) Mar. 7 (backwater from ice); minimum daily discharge, 9,000 ft^3/s (255 m^3/s) Jan. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14700	15100	10000	14000	16000	15000	17400	15000	20100	16500	14000	14800
2	14500	15100	10000	13000	15200	14100	16500	15000	20300	14600	14100	14800
3	14500	15200	9960	12500	15100	13700	15600	15000	23000	14600	14100	14700
4	14400	15300	10200	12000	15100	13700	17400	13300	25700	16100	14100	14700
5	14300	15300	11000	11000	15100	13700	18400	11400	26900	18200	14100	14700
6	14300	15600	11100	10000	15200	14800	18100	11200	26300	18700	13900	14700
7	14300	15800	11400	9600	15400	15200	17500	10900	25800	19300	13900	14700
8	14300	15700	11900	9000	16000	16800	16900	10900	26100	18000	12800	14700
9	14000	15500	12400	9200	17200	16700	16400	10900	25700	16300	14500	14600
10	13900	15300	13000	9800	17000	16700	16100	10700	25900	15400	14900	14800
11	14100	15300	12100	10500	16800	16000	16100	10100	26400	15300	14800	14800
12	14300	15200	13000	11000	16200	16000	16100	10500	27900	15400	14900	14800
13	14400	15100	13000	12000	16000	15000	16200	10700	29500	15700	14800	14700
14	14700	15200	12500	13000	16000	15500	16300	14100	27400	16300	14900	14500
15	14900	15300	11000	14000	16200	15500	16300	14500	26300	16100	15100	14100
16	14700	15400	10500	15000	16400	15200	16000	17900	25700	16100	15200	14200
17	15300	15500	10000	15000	16300	15500	15600	20000	26300	16300	15100	14100
18	15500	15500	10000	15800	15900	16900	15300	20300	24900	15900	15000	14600
19	15300	15000	10000	15900	15800	18200	15600	20200	23300	15500	14400	14700
20	15100	14900	10500	15500	15700	17900	15500	20200	21000	15300	13500	14600
21	15000	14900	12000	15000	15700	18600	15300	20300	17600	15200	13300	14600
22	15000	14900	13000	16000	15600	16700	15100	20400	16300	14700	14000	14700
23	14900	14900	13500	15600	15500	16500	15000	20100	16400	14600	14600	14700
24	14900	14900	13400	15000	15500	18300	15000	20300	16300	15000	14500	14700
25	14800	15000	13500	14200	15500	21400	14800	20300	16800	15000	14600	14700
26	14600	15000	14000	13700	15600	20800	15000	20300	16800	14800	14700	14800
27	14600	14100	14000	16000	15700	20200	15200	20200	16200	14600	14500	14800
28	14600	11400	13200	18000	15500	19600	14400	20100	16000	14400	14400	14700
29	14700	10400	13500	17200	15700	19000	15000	20300	15900	14400	14500	14700
30	14800	10000	13900	16900	---	18400	15000	20400	15700	14100	14700	14800
31	14900	---	14000	16500	---	17800	---	20200	---	14000	13800	---
TOTAL	454300	441800	371560	421900	458900	519400	479100	505700	668500	485400	445700	439500
MEAN	14650	14730	11990	13610	15820	16750	15970	16310	22280	15660	14380	14650
MAX	15500	15800	14000	18000	17200	21400	18400	20400	29500	19300	15200	14800
MIN	13900	10000	9960	9000	15100	13700	14400	10100	15700	14000	12800	14100
AC-FT	901100	876300	737000	836800	910200	1030000	950300	1003000	1326000	962800	884000	871700

CAL YR 1975 TOTAL 6092740 MEAN 16690 MAX 38200 MIN 7400 AC-FT 12080000
WTR YR 1976 TOTAL 5691760 MEAN 15550 MAX 29500 MIN 9000 AC-FT 11290000

06177500 REDWATER RIVER AT CIRCLE, MT

LOCATION.--Lat 47°24'51", long 105°34'30", in SW¼SW¼ sec.11, T.19 N., R.48 E., McCone County, Hydrologic Unit 10060002, on left bank at Circle, 1 mi (2 km) upstream from Horse Creek, and at mile 79.6 (128 km).

DRAINAGE AREA.--547 mi² (1,417 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April to November 1929, March to November 1930, July 1931 to December 1932, March to June 1933, February to November 1934, April 1935 to December 1936, April 1937 to June 1972, October 1974 to current year. Monthly discharge only for some periods, published in WSP 1309. Prior to October 1967, published as Redwater Creek at Circle.

REVISED RECORDS.--WSP 1006: 1929-30, 1932-33, 1935-39. WSP 1509: 1929, 1934. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Sharp-crested weir since Sept. 24, 1938. Altitude of gage is 2,380 ft (725.4 m), by barometer. Prior to June 1, 1941, and Mar. 23, 1943, to Feb. 16, 1948, nonrecording gage at site 0.3 mi (0.5 km) upstream at same datum. June 1, 1941, to Mar. 22, 1943, nonrecording gage at site 200 ft (61.0 m) upstream at datum 2.8 ft (0.85 m) lower. Feb. 26, 1948, to May 7, 1950, nonrecording gage at site 200 ft (61.0 m) upstream at present datum.

REMARKS.--Water-discharge records fair except those for winter period, which are poor. Few minor diversions for irrigation of hay meadows above station.

AVERAGE DISCHARGE.--38 years (1931-32, 1935-36, 1937-71, 1975-76) 14.0 ft³/s (0.40 m³/s), 10,140 acre-ft/yr (12.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,730 ft³/s (191 m³/s) July 14, 1957, gage height, 12.77 ft (3.892 m); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 80 ft³/s (2.27 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 2	1630	*191	5.41	*6.37	1.942	June 12	1230	169	4.79	6.22	1.896
Feb. 9	1430	123	3.48	5.85	1.783						

Minimum daily discharge, 0.06 ft³/s (0.002 m³/s) Aug. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.11	.16	.21	.32	111	7.4	4.4	1.9	.35	.71	.09	.09
2	.11	.16	.21	.29	142	6.2	3.9	1.7	.29	7.6	.06	.07
3	.11	.16	.21	.27	72	4.6	4.1	1.6	.24	5.8	.07	.09
4	.11	.16	.27	.24	38	3.7	3.9	1.5	.24	6.0	.11	.09
5	.11	.16	.24	.27	24	3.5	3.7	1.4	.29	19	.16	.09
6	.09	.18	.24	.27	21	4.6	3.2	1.3	.29	12	.11	.07
7	.11	.18	.21	.27	15	4.8	3.1	1.2	.56	8.4	.09	.09
8	.21	.16	.24	.27	12	5.9	2.8	1.2	.49	6.2	.09	.11
9	.18	.18	.24	.27	67	7.4	2.7	1.1	.39	4.8	.52	.11
10	.14	.18	.29	.27	38	8.0	2.7	1.0	.32	3.9	4.4	.11
11	.11	.18	.29	.29	43	7.7	2.7	.91	.27	2.7	11	.11
12	.11	.18	.29	.29	61	6.2	2.5	1.3	56	2.0	8.4	.11
13	.16	.21	.29	.29	55	5.9	2.5	1.2	31	1.5	6.2	.14
14	.27	.21	.29	.32	35	5.6	2.5	1.1	15	1.2	3.7	.11
15	.27	.21	.24	.32	30	5.0	2.4	1.1	11	.87	2.3	.14
16	.24	.21	.21	.27	28	5.3	2.2	.96	8.4	.71	1.6	.11
17	.21	.24	.16	.32	23	5.6	2.2	.83	7.7	.56	1.1	.11
18	.21	.27	.16	.29	22	6.8	2.4	.75	6.5	.45	.79	.11
19	.21	.27	.16	.79	19	7.1	2.1	.67	4.8	.39	.63	.16
20	.16	.24	.16	2.2	15	7.1	2.1	.63	3.3	.32	.45	.16
21	.14	.21	.18	1.7	13	6.8	2.1	.56	2.8	.29	.32	.16
22	.24	.18	.16	1.1	12	6.5	2.2	.56	2.5	.24	.24	.14
23	.24	.21	.18	1.1	12	8.4	2.2	.49	2.2	.21	.14	.09
24	.24	.21	.18	2.1	12	7.7	2.2	.45	2.3	.16	.14	.07
25	.21	.24	.21	1.6	11	7.7	2.4	.45	2.2	.14	.14	.09
26	.21	.24	.18	1.1	12	7.1	2.5	.42	2.0	.11	.11	.11
27	.18	.24	.21	.96	11	6.2	2.4	.39	1.6	.09	.09	.11
28	.18	.24	.24	1.2	11	5.6	2.2	.39	1.3	.09	.09	.11
29	.18	.24	.27	7.2	10	5.3	2.2	.35	1.1	.07	.09	.11
30	.18	.21	.32	81	---	4.8	2.0	.39	.96	.07	.09	.09
31	.18	---	.32	83	---	4.6	---	.39	---	.07	.11	---
TOTAL	5.41	6.14	7.08	190.18	974	189.1	80.5	28.19	166.39	86.65	43.43	3.26
MEAN	.17	.20	.23	6.13	33.6	6.10	2.68	.91	5.55	2.80	1.40	.11
MAX	.27	.27	.32	83	142	8.4	4.4	1.9	56	19	11	.16
MIN	.09	.16	.16	.24	10	3.5	2.0	.35	.24	.07	.06	.07
AC-FT	11	12	14	377	1930	375	160	56	330	172	86	6.5

CAL YR 1975 TOTAL 1069.76 MEAN 2.93 MAX 157 MIN .05 AC-FT 2120
WTR YR 1976 TOTAL 1780.33 MEAN 4.86 MAX 142 MIN .06 AC-FT 3530

06177500 REDWATER RIVER AT CIRCLE, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
29...	1200	.18	3500	8.7	16.0	5.0	10	10.7	91	1.1	650	16
NOV												
20...	1200	.24	3750	8.5	-4.0	1.5	7	12.0	92	1.2	690	38
DEC												
10...	1430	.29	3800	8.1	-4.0	1.5	5	9.0	69	.6	840	180
JAN												
27...	1500	.96	3050	8.0	5.5	1.0	15	7.6	58	.8	690	300
FEB												
25...	1630	12	1800	8.1	15.5	.5	8	8.2	62	.5	380	160
MAR												
19...	1600	7.2	2060	8.2	9.0	1.5	10	10.1	78	--	460	190
APR												
29...	1630	2.2	3330	8.4	14.0	10.5	10	10.5	103	--	850	400
MAY												
26...	1230	2.4	3800	8.5	17.5	16.5	25	8.4	94	2.6	860	380
JUN												
14...	0730	16	2320	8.1	13.5	16.0	60	5.2	58	4.9	570	340
JUL												
20...	0900	.32	2540	8.2	20.0	22.0	25	6.4	79	2.4	730	310
AUG												
18...	1200	.83	3200	8.5	22.5	21.0	45	7.0	86	2.7	790	380
SEP												
22...	0800	.14	3710	8.4	9.0	13.0	20	7.4	76	3.7	760	210

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
OCT											
29...	77	110	660	11	8.2	725	22	1400	18	1.4	4.7
NOV											
20...	94	110	690	11	8.9	766	13	1500	18	1.3	5.8
DEC											
10...	120	130	660	9.9	9.0	802	0	1500	16	1.2	10
JAN											
27...	93	110	450	7.5	12	465	0	1200	12	.5	9.1
FEB											
25...	59	57	200	4.5	7.5	271	0	590	5.5	.3	6.6
MAR											
19...	66	72	290	5.9	7.2	329	0	800	5.9	.3	3.7
APR											
29...	110	140	550	8.2	9.8	527	10	1600	11	.6	3.2
MAY											
26...	98	150	640	9.5	10	588	0	1700	14	.8	3.9
JUN											
14...	63	100	350	6.4	13	278	0	1100	8.8	.3	5.7
JUL											
20...	94	120	460	7.4	13	516	0	1300	12	.7	4.7
AUG											
18...	100	130	570	8.9	14	490	0	1500	13	.6	5.9
SEP											
22...	74	140	680	11	14	647	13	1700	17	1.1	5.5

06177500 REDWATER RIVER AT CIRCLE, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT											
29...	2660	3.62	1.29	.02	.05	.87	.92	.94	.09	630	20
NOV											
20...	2820	3.84	1.83	.02	.00	1.4	1.4	1.4	.01	560	10
DEC											
10...	2840	3.86	2.22	.02	.20	.75	.95	.97	.00	490	70
JAN											
27...	2120	2.88	5.50	.23	.05	1.8	1.8	2.0	.04	340	250
FEB											
25...	1060	1.44	35.5	.06	.05	.88	.93	.99	.03	220	120
MAR											
19...	1410	1.92	27.4	.01	.04	.96	1.0	1.0	.04	250	80
APR											
29...	2700	3.67	16.0	.08	.01	.70	.71	.79	.02	700	0
MAY											
26...	2910	3.96	18.9	.01	.04	.61	.65	.66	.05	500	20
JUN											
14...	1780	2.42	76.9	.32	.17	1.2	1.4	1.7	.12	460	60
JUL											
20...	2260	3.07	1.95	.00	.00	.79	.79	.79	.08	630	40
AUG											
18...	2580	3.51	5.78	.11	.00	1.6	1.6	1.7	.10	730	30
SEP											
22...	2960	4.03	1.12	.01	.02	.52	.54	.55	.07	770	10

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BISMUTH (BI) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)
OCT											
29...	1200	220	10	3	3	50	0	10	<30	0	1
DEC											
10...	1430	100	--	1	--	--	10	--	--	<10	--
MAR											
19...	1600	210	--	1	--	--	10	--	--	10	--
JUN											
14...	0730	1400	--	3	--	--	0	--	--	0	--
SEP											
22...	0800	360	--	4	--	--	0	--	--	<10	--

DATE	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED GALLIUM (GA) (UG/L)	DIS-SOLVED GER-MANIUM (GE) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)
OCT										
29...	40	0	<10	10	0	<7	<30	500	<100	0
DEC										
10...	10	--	--	10	--	--	--	600	<100	--
MAR										
19...	0	--	--	10	--	--	--	590	<100	--
JUN										
14...	10	--	--	10	--	--	--	2000	4	--
SEP										
22...	0	--	--	<10	--	--	--	730	<100	--

DATE	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)
OCT										
29...	60	50	40	5	.1	.1	7	7	0	2
DEC										
10...	60	--	340	--	.2	--	6	--	<50	--
MAR										
19...	30	--	140	--	.0	--	2	--	<50	--
JUN										
14...	30	--	100	--	<.5	--	3	--	2	--
SEP										
22...	60	--	70	--	.1	--	6	--	<50	--

06177500 REDWATER RIVER AT CIRCLE, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED STRON-TIUM (SR) (UG/L)	DIS-SOLVED TIN (SN) (UG/L)	DIS-SOLVED TI-TANIUM (TI) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	DIS-SOLVED ZIR-CONIUM (ZR) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
29...	0	0	<4	1700	<30	<7	2.1	<30	20	0
DEC										
10...	0	--	--	--	--	--	--	--	40	--
MAR										
19...	0	--	--	--	--	--	--	--	260	--
JUN										
14...	0	--	--	--	--	--	--	--	20	--
SEP										
22...	1	--	--	--	--	--	--	--	10	--

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	DIS-SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS-PENDED GROSS ALPHA AS U-NAT. (UG/L)	DIS-SOLVED GROSS BETA AS CS-137 (PC/L)	SUS-PENDED GROSS BETA AS CS-137 (PC/L)	DIS-SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS-PENDED GROSS BETA AS SR90 /Y90 (PC/L)	DIS-SOLVED RA-226 (RADON METHOD) (PC/L)	DIS-SOLVED URANIUM (DIRECT FLUORO-METRIC) (PC/L)	TOTAL FILT-RABLE RESIDUE (MG/L)	TOTAL NON-FILT-RABLE RESIDUE (MG/L)
OCT											
29...	1200	<23	.9	6.8	1.8	5.6	1.5	.10	6.2	2800	27

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
OCT					
29...	1200	5.0	.18	114	.06
NOV					
20...	1200	1.5	.24	17	.01
DEC					
10...	1430	1.5	.29	36	.03
JAN					
27...	1500	1.0	.96	22	.06
FEB					
25...	1630	.5	12	19	.62
MAR					
19...	1600	1.5	7.2	47	.91
APR					
29...	1630	10.5	2.2	102	.61
MAY					
26...	1230	16.5	2.4	126	.82
JUN					
14...	0730	16.0	16	81	3.5
AUG					
10...	1200	21.0	.83	161	.36
SEP					
22...	0800	13.0	.14	121	.05

06177825 REDWATER RIVER NEAR VIDA, MT

LOCATION.--Lat 47°54'07", long 105°12'54", in SW¼ sec.24, T.25 N., R.50 E., McCone County, Hydrologic Unit 10060002, on right bank at downstream side of bridge on FAS Highway 201, 400 ft (122 m) downstream from East Redwater River and 13.7 mi (22.0 km) northeast of Vida post office.

DRAINAGE AREA.--1,974 mi^2 (5,113 km^2).

PERIOD OF RECORD.--October 1975 to September 1976.

GAGE.--Water-stage recorder. Altitude of gage is about 2,100 ft (640 m), from topographic map.

REMARKS.--Records good except those for winter period and Mar. 25 to Apr. 30, which are poor. Diversions for irrigation of about 4,500 acres (18.2 km^2) above station and many stock ponds and small reservoirs on upstream tributaries.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,500 ft^3/s (99.1 m^3/s) June 12, 1976, gage height, 6.03 ft (1.838 m); minimum daily, 2.0 ft^3/s (0.057 m^3/s) Jan. 10, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft^3/s (14.2 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
June 12	1800	*3500	99.1	*6.03	1.838	July 11	2200	2830	80.1	3.57	1.088
July 3	0600	3200	90.6	5.83	1.777						

Minimum daily discharge, 2.0 ft^3/s (0.057 m^3/s) Jan. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	5.7	4.2	3.1	100	76	63	19	6.9	29	7.5	3.8
2	2.7	5.7	4.5	3.0	250	65	58	16	6.6	215	6.9	3.3
3	2.7	5.7	4.6	2.8	210	70	54	16	6.0	1920	6.0	3.3
4	2.9	5.7	5.0	2.6	190	70	52	15	6.0	709	6.0	3.3
5	2.9	5.7	5.2	2.5	170	60	49	13	5.7	296	5.4	3.3
6	2.9	5.7	5.4	2.4	150	55	45	12	5.7	190	5.7	2.9
7	2.9	5.4	5.4	2.3	110	59	42	12	6.9	144	5.4	2.9
8	2.9	5.4	5.4	2.2	100	50	38	11	7.5	114	7.9	3.1
9	2.9	5.4	5.4	2.1	90	60	37	9.6	7.2	96	12	2.9
10	2.9	5.4	5.6	2.0	150	90	35	9.2	6.6	78	16	2.7
11	2.9	5.4	5.4	2.1	220	120	32	9.2	37	223	17	2.7
12	2.9	5.4	5.0	2.2	200	110	30	17	2270	449	11	2.7
13	3.1	4.9	4.5	2.3	190	135	29	17	1220	176	9.6	2.7
14	6.3	4.9	4.0	2.5	180	125	25	16	440	116	7.5	2.7
15	6.9	4.9	3.5	2.7	170	110	24	16	240	74	6.9	2.7
16	7.2	4.9	3.0	2.7	180	150	23	16	164	57	6.0	2.7
17	7.2	4.9	2.7	2.7	170	250	26	15	144	49	5.4	2.7
18	7.2	4.9	2.3	2.7	160	400	29	14	111	39	5.7	3.6
19	6.9	4.9	3.1	2.7	150	350	31	13	92	34	5.7	3.6
20	6.6	5.1	2.9	2.9	130	250	33	11	74	27	5.4	3.3
21	6.6	4.8	2.7	2.9	120	210	32	9.6	65	23	5.4	3.1
22	6.6	4.6	2.5	2.9	110	170	33	8.3	60	21	5.1	2.9
23	6.3	4.5	2.3	3.1	110	150	33	8.3	54	16	4.3	2.9
24	6.3	4.5	2.3	3.1	120	130	35	6.3	48	13	4.3	2.7
25	6.0	4.5	2.3	3.1	150	120	34	14	43	13	4.6	2.7
26	5.7	4.5	2.3	3.3	165	107	34	13	45	11	4.6	2.3
27	5.7	4.5	2.5	3.3	150	94	31	8.7	39	9.2	4.1	2.3
28	5.4	4.3	2.7	3.2	125	86	26	8.3	37	8.7	4.1	2.3
29	5.4	4.2	3.0	3.1	90	82	24	6.9	35	8.7	4.1	2.3
30	5.4	4.0	3.3	5.0	---	74	21	6.9	32	7.9	4.1	2.3
31	5.4	---	3.3	25	---	69	---	6.9	---	7.9	4.1	---
TOTAL	150.6	150.4	116.3	108.5	4410	3977	1050	376.2	5333.1	5176.4	207.8	86.9
MEAN	4.86	5.01	3.75	3.50	152	128	35.3	12.1	176	167	6.70	2.90
MAX	7.2	5.7	5.6	25	250	400	63	19	2270	1920	17	3.8
MIN	2.7	4.0	2.3	2.0	90	55	21	6.9	5.7	7.9	4.1	2.3
AC-FT	299	298	231	215	8750	7890	2100	746	10580	10270	412	172

WTR YR 1976 TOTAL 21151.2 MEAN 57.8 MAX 2270 MIN 2.0 AC-FT 41950

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1975 to September 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
15...	1500	6.8	3100	8.8	16.0	6.0	10	9.6	83	2.7	370	0
NOV												
21...	1100	5.1	3300	8.6	-10.0	1.0	10	12.7	96	1.1	470	0
DEC												
30...	1200	3.4	3600	8.3	3.0	.5	6	11.0	83	.4	600	0
JAN												
28...	1200	3.2	4250	8.0	4.0	.5	7	10.0	76	7.1	560	0
FEB												
26...	1200	164	1020	7.8	-3.0	.5	25	8.8	67	4.5	170	0
MAR												
22...	1400	163	990	8.4	15.5	1.0	40	11.4	86	3.9	190	4
APR												
30...	1200	20	3120	8.7	11.0	10.5	20	9.2	90	2.3	510	0
MAY												
26...	1600	11	2940	8.6	19.5	15.0	35	8.2	90	3.4	440	0
JUN												
13...	1600	982	812	8.4	19.0	17.0	1000	6.2	70	5.6	140	0
JUL												
20...	1300	28	2130	8.7	26.0	25.0	25	7.2	95	2.5	370	0
AUG												
19...	1400	5.9	2750	8.6	27.5	24.0	40	6.8	88	2.6	360	0
SEP												
21...	1500	3.1	2780	8.6	24.0	19.5	15	8.5	100	2.0	370	0

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
OCT											
15...	39	67	540	12	8.3	567	28	1000	3.0	.5	3.1
NOV											
21...	55	80	630	13	9.8	637	35	1200	15	.7	5.5
DEC											
30...	75	99	780	14	9.9	925	0	1500	15	.6	8.2
JAN											
28...	79	88	680	13	9.0	866	0	1300	15	.6	8.9
FEB											
26...	30	24	140	4.6	8.0	212	0	290	3.6	.2	6.3
MAR											
22...	30	28	140	4.4	7.1	227	0	300	4.4	.2	5.3
APR											
30...	66	83	590	11	10	676	25	1200	8.8	.6	2.7
MAY											
26...	49	78	540	11	9.0	592	0	1100	10	.5	3.1
JUN											
13...	26	18	110	4.1	7.1	220	0	250	5.3	.2	6.1
JUL											
20...	57	56	360	8.1	11	476	11	730	12	.4	8.6
AUG											
19...	34	67	580	13	11	606	--	1000	14	.7	5.4
SEP											
21...	37	68	540	12	11	601	0	990	14	.6	2.0

06177825 REDWATER RIVER NEAR VIDA, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT											
15...	1970	2.68	36.2	.01	.04	.60	.64	.65	.02	310	20
NOV											
21...	2350	3.20	32.4	.01	.00	.80	.80	.81	.01	320	10
DEC											
30...	2940	4.00	27.0	.06	.01	.39	.40	.46	.01	310	60
JAN											
28...	2610	3.55	22.6	.07	.03	.65	.68	.75	.00	310	10
FEB											
26...	607	.83	269	.09	.10	1.4	1.5	1.6	.13	140	190
MAR											
22...	627	.85	276	.08	.10	1.1	1.2	1.3	.11	120	140
APR											
30...	2320	3.16	125	.01	.01	1.3	1.3	1.3	.04	480	0
MAY											
26...	2080	2.83	61.8	.02	.09	.84	.93	.95	.09	290	40
JUN											
13...	531	.72	1410	.74	.63	4.4	5.0	5.7	.72	80	90
JUL											
20...	1480	2.01	112	.00	.00	.79	.79	.79	.09	310	30
AUG											
19...	2010	2.73	32.0	.03	.01	.88	.89	.92	.07	380	30
SEP											
21...	1960	2.67	16.4	.13	.01	.67	.68	.81	.05	350	10

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)
OCT											
15...	1500	350	--	0	--	10	--	0	--	30	--
NOV											
21...	1100	200	10	1	1	0	0	<10	0	10	0
DEC											
30...	1200	180	--	1	--	10	--	10	--	--	--
MAR											
22...	1400	1500	--	3	--	0	--	10	--	0	--
JUN											
13...	1600	22000	--	35	--	0	--	0	--	40	--
SEP											
21...	1500	420	--	2	--	0	--	10	--	0	--

DATE	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)
OCT										
15...	20	--	350	<100	--	80	--	70	--	.3
NOV										
21...	<10	1	240	<100	3	50	60	40	30	.0
DEC										
30...	10	--	270	<100	--	80	--	100	--	.0
MAR										
22...	10	--	2400	<100	--	20	--	130	--	.0
JUN										
13...	40	--	35000	36	--	40	--	1100	--	<.5
SEP										
21...	<10	--	570	<100	--	80	--	50	--	.1

06177825 REDWATER RIVER NEAR VIDA, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
15...	--	5	--	0	--	0	--	--	30	--
NOV										
21...	.0	6	7	<50	1	0	0	.5	0	10
DEC										
30...	--	6	--	100	--	0	--	--	20	--
MAR										
22...	--	2	--	<50	--	0	--	--	20	--
JUN										
13...	--	1	--	47	--	2	--	--	130	--
SEP										
21...	--	3	--	50	--	0	--	--	0	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
OCT					
16...	1500	6.0	6.8	51	.94
NOV					
21...	1100	1.0	5.1	82	1.1
DEC					
30...	1200	.5	3.4	61	.56
JAN					
28...	1200	.5	3.2	95	.82
FEB					
26...	1200	.5	164	32	14
MAR					
22...	1400	1.0	163	75	33
APR					
30...	1200	10.5	20	103	5.6
MAY					
26...	1600	15.0	11	124	3.7
JUN					
13...	1600	17.0	982	1700	4510
JUL					
20...	1300	25.0	28	134	10
AUG					
19...	1400	24.0	5.9	109	1.7
SEP					
21...	1500	19.5	3.1	44	.37

06178000 POPLAR RIVER AT INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 48°59'30", long 105°41'40", in SE¼ sec.6, T.37 N., R.46 E., Daniels County, Hydrologic Unit 10060003, on left bank 0.5 mi (0.8 km) south of international boundary, 1.5 mi (2.4 km) upstream from Coal Creek, and 18.5 mi (29.8 km) northwest of Scoby, Mt.

DRAINAGE AREA.--362 mi^2 (938 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1931 to current season (seasonal records only for most seasons).

REVISED RECORDS.--WSP 1389: 1931, 1935-37(M), 1939-40, 1942(M), 1943, 1948(M), 1950(M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 2,460 ft (750 m), from topographic map.

REMARKS.--Water-discharge records good except those for winter period, which are poor. A few small diversions for irrigation above station.

COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,700 ft^3/s (360 m^3/s) Apr. 6, 1954, gage height, 10.25 ft (3.124 m), from floodmark, from rating curve extended above 2,500 ft^3/s (70.8 m^3/s) on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES FOR CURRENT SEASON.--Maximum discharge, 3,350 ft^3/s (94.9 m^3/s) Mar. 18, gage height, 8.28 ft (2.524 m), backwater from ice; no flow Mar. 5-16.

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1976 TO DECEMBER 1976
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		---	18	128	12	3.1	6.1	1.1	.18	.42	4.4	
2		---	6.3	146	11	2.9	9.5	.98	.15	.44	4.1	
3		---	.53	132	11	2.4	39	.90	.15	.78	3.9	
4		---	.48	63	9.9	2.6	44	.90	.15	.89	3.9	
5		---	0	40	9.0	2.9	887	.98	.15	.87	4.1	
6		---	0	30	8.5	5.0	190	1.1	.13	1.0	4.2	
7		---	0	25	8.2	12	72	1.1	.13	1.2	4.0	
8		---	0	24	7.7	14	40	16	.14	1.4	4.1	
9		---	0	27	7.1	27	25	10	.17	1.6	3.9	
10		---	0	24	6.7	20	18	7.5	.18	1.7	---	
11		---	0	22	6.1	16	15	4.9	.18	1.7	---	
12		---	0	21	6.5	26	14	3.9	.17	1.8	---	
13		---	0	19	6.2	42	14	3.4	.21	2.1	---	
14		---	0	18	5.7	44	13	2.3	.23	2.1	---	
15		---	0	18	5.1	29	11	1.7	.22	2.1	---	
16		---	0	17	4.9	22	14	1.2	.23	2.3	---	
17		---	56	17	4.8	18	12	.84	.27	2.6	---	
18		---	910	16	3.8	16	9.9	.77	.26	2.7	---	
19		---	1840	16	3.3	13	8.8	.70	.29	3.1	---	
20		---	1120	15	3.1	10	8.2	.64	.29	3.2	---	
21		---	917	15	3.2	8.1	7.4	.44	.31	3.4	---	
22		---	848	15	3.2	9.6	6.4	.31	.31	3.2	---	
23		---	759	16	2.7	18	5.9	.20	.31	3.4	---	
24		---	527	21	2.3	42	5.8	.18	.30	3.5	---	
25		---	578	22	2.0	25	5.4	.20	.37	3.9	---	
26		---	457	20	2.8	16	3.8	.20	.45	3.9	---	
27		17	364	17	3.4	13	2.6	.18	.43	4.0	---	
28		26	301	16	3.2	11	1.9	.18	.40	4.4	---	
29		26	251	15	2.7	9.0	1.5	.18	.44	4.4	---	
30		---	184	14	3.2	7.8	1.4	.20	.42	4.4	---	
31		---	138	---	3.3	---	1.3	.18	---	4.4	---	
TOTAL		---	5275.31	989	172.6	487.4	1493.9	63.36	7.68	76.90	---	
MEAN		---	299	33.0	5.57	16.2	48.2	2.04	.25	2.48	---	
MAX		---	1840	146	12	44	887	16	.45	4.4	---	
MIN		---	0	14	2.0	2.4	1.3	.18	.13	.42	---	
AC-FT		---	10400	1960	342	967	2960	126	15	153	---	

THE SEASON MARCH TO OCTOBER AC-FT 24,920

06178000 POPLAR RIVER AT INTERNATIONAL BOUNDARY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964-65, July to September 1976.

WATER QUALITY DATA, JULY TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)
JUL 07...	1630	58	788	8.2	29.0	25.0	45	4.6	60	180	0	30
AUG 02...	1730	.92	1360	9.0	28.5	23.0	5	8.6	110	290	0	35
SEP 07...	1630	.13	1670	8.5	18.0	16.5	2	11.4	128	280	0	44

DATE	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)
JUL 07...	26	120	3.9	10	376	0	120	4.2	.2	14	511	.70
AUG 02...	48	230	5.9	11	607	30	200	7.6	.5	1.7	865	1.18
SEP 07...	42	300	7.8	8.8	594	62	300	11	.6	3.7	1070	1.46

DATE	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO PHOSPHATE (PO4) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
JUL 07...	80	.00	.00	1.1	1.1	1.1	.11	.21	.07	920	90	--
AUG 02...	2.15	.01	.01	.91	.92	.93	.06	.03	.01	1400	70	--
SEP 07...	.38	.06	.02	.41	.43	.49	.03	.03	.01	1700	20	20

DATE	TIME	DISSOLVED ALUMINUM (AL) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)
SEP 07...	1630	0	2	0	1	0	0	2

DATE	DISSOLVED LITHIUM (LI) (UG/L)	DISSOLVED MERCURY (HG) (UG/L)	DISSOLVED MOLYBDENUM (MO) (UG/L)	DISSOLVED NICKEL (NI) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	DISSOLVED VANADIUM (V) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
SEP 07...	100	.0	2	1	0	4.3	10

06178150 POPLAR RIVER NEAR SCOBEY, MT

LOCATION.--Lat 48°52'23", long 105°29'50", in NE¼SE¼ sec.13, T.36 N., R.47 E., Daniels County, Hydrologic Unit 10060004, 200 ft (61 m) upstream from county road crossing, approximately 6 mi (10 km) from mouth and 6.4 mi (10.3 km) northeast of Scobey.

DRAINAGE AREA.--572 mi² (1,480 km²).

PERIOD OF RECORD.--Water years 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	HARDNESS (CA,MG) (MG/L)
NOV										
25...	1415	8.0	--	--	9.0	.0	--	--	--	330
JAN										
20...	1445	6.2	--	--	--	.0	--	--	--	410
MAR										
17...	1300	12	--	--	--	.5	--	--	--	190
APR										
20...	1400	29	--	--	15.0	8.0	--	--	--	260
MAY										
19...	1630	8.1	--	--	--	18.5	--	--	--	310
JUL										
07...	2000	127	392	8.1	25.0	23.5	450	5.0	65	110
AUG										
03...	1100	5.1	1330	8.9	24.0	21.0	35	7.0	85	290
SEP										
07...	1800	2.0	1500	8.5	15.0	16.0	50	7.8	85	270

DATE	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)
NOV									
25...	0	50	50	230	5.5	8.6	702	--	260
JAN									
20...	0	69	58	320	6.9	9.1	951	--	350
MAR									
17...	0	39	23	94	3.0	11	367	--	94
APR									
20...	0	48	34	110	3.0	8.4	470	--	100
MAY									
19...	0	48	47	200	4.9	8.5	634	--	210
JUL									
07...	0	26	12	38	1.5	8.3	198	0	40
AUG									
03...	0	46	43	220	5.6	10	557	47	210
SEP									
07...	0	40	41	260	6.9	10	615	28	290

DATE	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)
NOV									
25...	11	.5	5.8	963	1.31	20.8	--	.00	--
JAN									
20...	14	.6	13	1300	1.77	21.8	--	.12	--
MAR									
17...	4.3	.3	10	459	.62	14.9	--	.36	--
APR									
20...	4.8	.3	8.3	546	.74	42.8	--	.00	--
MAY									
19...	6.7	.4	6.7	841	1.14	18.4	--	--	--
JUL									
07...	2.2	.2	8.8	234	.32	80.2	.27	--	.03
AUG									
03...	8.6	.5	11	872	1.19	12.0	.01	--	.01
SEP									
07...	11	.5	7.1	993	1.35	5.36	.02	--	.04

06178150 POPLAR RIVER NEAR SCOBEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO PHOSPHATE (PO4) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
NOV									
25...	--	--	--	--	.00	.00	1300	20	0
JAN									
20...	--	--	--	--	.00	.00	1600	100	30
MAR									
17...	--	--	--	--	.09	.03	480	210	70
APR									
20...	--	--	--	--	.00	.00	590	110	10
MAY									
19...	--	--	--	--	.00	.00	1100	10	0
JUL									
07...	3.0	3.0	3.3	.19	.25	.08	360	30	--
AUG									
03...	1.2	1.2	1.2	.13	.06	.02	1500	30	--
SEP									
07...	1.8	1.8	1.8	.18	.03	.01	1600	20	0

DATE	TIME	DISSOLVED ALUMINUM (AL) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)
SEP								
07...	1800	20	5	0	0	0	1	3

DATE	DISSOLVED LITHIUM (LI) (UG/L)	DISSOLVED MERCURY (HG) (UG/L)	DISSOLVED MOLYBDENUM (MO) (UG/L)	DISSOLVED NICKEL (NI) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	DISSOLVED VANADIUM (V) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
SEP							
07...	100	.0	3	2	0	4.0	10

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY

(International gaging station)

LOCATION.--Lat 49°00'00", long 105°24'30", in SW¼ sec.3, T.1, R.26 W., second meridian, Hydrologic Unit 10060003, on left bank 10 ft (3 m) north of international boundary, 400 ft (122 m) southwest of Canadian East Poplar Port of Entry, 20 mi (32 km) upstream from mouth, and 14 mi (23 km) north of Scobey, Mt.

DRAINAGE AREA.--534 mi^2 (1,383 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1931 to current year (seasonal records only in most seasons prior to October 1974). Prior to March 1962, published as East Fork Poplar River at international boundary.

REVISED RECORDS.--WSP 1389: 1932, 1939, 1942-43, 1947. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Rock and concrete control since July 8, 1968. Datum of gage is 2,410.92 ft (734.848 m) above mean sea level (International Boundary Survey datum). Prior to Oct. 5, 1953, water-stage recorder at site 80 ft (24 m) upstream at same datum.

REMARKS.--Water-discharge records fair except those for the period May 1 to Aug. 11, which are poor. Several diversions for irrigation above station.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,020 ft^3/s (114 m^3/s) Apr. 23, 1975, gage height, 12.01 ft (3.661 m); maximum gage height, 12.8 ft (3.90 m) Mar. 25, 1943, from floodmark (backwater from ice); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,000 ft^3/s (28.3 m^3/s) Mar. 24, gage height, 10.26 ft (3.127 m), Backwater from ice; minimum daily, 0.33 ft^3/s (0.009 m^3/s) Dec. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.62	.50	.70	.62	3.9	2.0	206	106	2.8	13	27	3.1
2	.62	.49	.70	.62	3.9	3.0	198	104	2.7	58	27	3.3
3	.61	.50	.75	.64	3.9	8.2	190	102	3.5	89	27	3.0
4	.70	.49	.80	.62	3.0	5.0	186	99	21	98	27	3.1
5	.70	.48	.80	.60	2.0	5.0	212	91	29	115	29	3.4
6	.70	.49	.73	.59	1.3	6.2	238	83	22	146	27	3.9
7	.62	.56	.70	.56	.72	2.7	214	72	30	175	27	3.5
8	.55	.54	.64	.58	2.0	2.6	198	67	50	173	32	3.2
9	.48	.53	.69	.54	3.9	2.9	188	69	44	170	57	3.0
10	.55	.55	.70	.54	3.0	15	178	46	50	166	89	3.0
11	.55	.55	.70	.58	1.9	10	171	3.8	78	164	8.8	3.0
12	.62	.55	.64	.62	.75	5.0	169	3.2	88	162	4.3	4.4
13	.70	.55	.62	.64	.70	4.0	182	1.8	88	160	3.3	3.3
14	.96	.59	.58	.69	.72	3.0	200	2.1	97	157	2.9	3.1
15	.96	.62	.59	.70	.77	3.0	204	2.0	100	154	2.7	3.1
16	.96	.62	.57	.70	.73	4.0	251	1.8	102	154	2.7	3.1
17	1.1	.62	.45	.70	.74	13	270	1.6	99	152	3.8	3.0
18	1.2	.62	.40	.70	.68	53	227	2.1	105	152	3.9	3.2
19	.96	.64	.33	.75	.62	39	395	2.0	139	152	3.8	3.0
20	.87	.62	.50	.70	.62	200	377	1.8	140	151	3.6	3.0
21	.78	.57	.53	.75	.62	248	284	2.1	155	117	3.4	2.8
22	.87	.55	.53	.95	2.6	205	235	2.1	170	79	3.2	2.8
23	.87	.55	.53	2.1	12	525	208	2.0	182	69	3.3	2.8
24	.85	.55	.55	3.0	25	827	192	2.0	188	63	3.3	2.6
25	.87	.55	.58	3.6	35	491	178	2.1	185	63	3.2	2.6
26	.88	.67	.63	3.8	25	405	173	3.3	183	53	3.3	2.7
27	.81	.70	.69	3.8	10	360	164	2.7	182	41	3.4	2.6
28	.74	.70	.77	4.0	5.0	321	165	2.5	180	41	3.0	2.8
29	.67	.66	.72	3.9	3.0	249	5.9	3.2	176	36	3.3	2.9
30	.55	.70	.70	3.9	---	220	20	3.0	136	27	3.2	3.1
31	.49	---	.70	3.9	---	210	---	2.5	---	27	3.1	---
TOTAL	23.41	17.31	19.52	46.39	154.07	4447.6	6068.9	888.7	3028.0	3377	444.5	92.4
MEAN	.76	.58	.63	1.50	5.31	143	202	28.7	101	109	14.3	3.08
MAX	1.2	.70	.80	4.0	35	827	395	106	188	175	89	4.4
MIN	.48	.48	.33	.54	.62	2.0	5.9	1.6	2.7	13	2.7	2.6
AC-FT	46	34	39	92	306	8820	12040	1760	6010	6700	882	183

CAL YR 1975 TOTAL 18372.73 MEAN 50.3 MAX 3340 MIN .33 AC-FT 36440
WTR YR 1976 TOTAL 18607.80 MEAN 50.8 MAX 827 MIN .33 AC-FT 36910

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964-65, 1975 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: June 1975 to current year.

INSTRUMENTATION.--Temperature recorder since June 17, 1975.

REMARKS.--Several diversions for irrigation upstream from station. Temperature recorder inoperative from October 6 to February 17.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 29.5°C July 6, 1975.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 26.0°C June 2.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
06...	1430	.70	1550	8.6	22.0	12.0	8	10.2	104	--	290	0
NOV												
26...	1100	.67	1450	7.5	-7.0	1.5	3	12.0	94	1.1	370	0
DEC												
19...	1030	.33	1850	7.6	2.0	.5	2	6.0	45	--	410	0
JAN												
20...	1030	.70	1400	7.5	2.0	.5	6	.9	7	--	310	0
FEB												
18...	1500	.68	1420	7.5	5.0	1.0	4	3.6	28	2.1	310	0
MAR												
18...	1200	53	171	7.9	9.0	.0	180	6.8	51	6.1	50	0
APR												
06...	1430	233	340	7.7	21.0	4.0	45	9.0	75	3.2	86	0
MAY												
20...	1230	1.4	1390	8.4	19.0	16.0	7	8.8	98	2.4	300	0
JUN												
16...	1530	104	1240	8.6	15.0	17.5	30	8.2	93	1.9	210	--
JUL												
08...	1300	173	1430	8.9	27.0	20.5	20	6.8	82	2.5	230	0
AUG												
04...	1330	26	1360	8.9	26.0	20.0	55	5.0	60	2.2	260	0
SEP												
09...	1130	3.0	1480	8.3	15.0	12.0	10	8.0	82	2.2	310	0

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)
OCT												
06...	43	45	240	6.1	10	619	33	250	5.3	.3	2.6	936
NOV												
26...	74	46	290	6.5	9.6	876	0	310	6.7	.5	10	1180
DEC												
19...	81	51	280	6.0	9.7	929	0	270	6.0	.4	21	1180
JAN												
20...	65	36	220	5.4	6.9	697	0	230	6.0	.4	17	927
FEB												
18...	66	36	210	5.2	7.6	685	0	220	4.8	.3	16	901
MAR												
18...	12	4.8	12	.7	7.7	73	0	20	.8	.1	3.3	97
APR												
06...	19	9.4	32	1.5	8.5	142	0	48	2.2	.1	4.5	194
MAY												
20...	46	45	200	5.0	9.6	594	0	270	4.4	.3	5.2	875
JUN												
16...	28	35	220	6.5	19	--	0	250	7.4	.2	3.7	--
JUL												
08...	28	40	260	7.4	22	446	61	310	9.0	.1	4.3	956
AUG												
04...	40	39	230	6.2	21	554	0	270	8.4	.2	7.0	891
SEP												
09...	53	44	240	5.9	17	655	0	300	8.0	.3	9.3	997

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT											
06...	1.27	1.77	.01	.02	1.1	1.1	1.1	.06	--	1800	40
NOV											
26...	1.60	2.13	.01	.22	1.5	1.7	1.7	.03	--	2300	30
DEC											
19...	1.60	1.05	.03	.88	.92	1.8	1.8	.02	--	2300	120
JAN											
20...	1.26	1.75	.04	.92	.18	1.1	1.1	.02	--	1800	120
FEB											
18...	1.23	1.65	.06	.76	.94	1.7	1.8	.04	--	1700	70
MAR											
18...	.13	13.88	.69	.22	3.7	3.9	4.6	.29	--	120	240
APR											
06...	.26	124	.52	.23	1.5	1.7	2.2	.28	--	270	30
MAY											
20...	1.19	3.31	.02	.02	.51	.53	.55	.06	--	1900	10
JUN											
16...	--	--	.37	.01	1.2	1.2	1.6	.24	--	1300	90
JUL											
08...	1.30	447	.27	.08	.00	.07	.34	.26	--	1800	70
AUG											
04...	1.21	62.5	.10	.37	1.2	1.6	1.7	.27	.17	1600	40
SEP											
09...	1.36	8.08	.01	.00	.98	.98	.99	.13	.01	1900	20

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)
OCT											
06...	1430	150	--	5	--	10	--	10	--	10	--
DEC											
19...	1030	100	0	2	--	--	--	10	--	0	--
FEB											
18...	1500	40	20	2	2	10	0	<10	0	0	0
MAR											
18...	1200	8100	--	11	--	0	--	<10	--	10	--
APR											
06...	1430	3000	40	4	1	10	0	<10	0	10	0
JUN											
16...	1530	150	--	14	--	0	--	2	--	<10	--
SEP											
09...	1130	--	10	--	4	--	0	--	1	--	0

DATE	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)
OCT										
06...	0	--	520	<100	--	110	--	90	--	.0
DEC										
19...	--	--	440	<100	--	150	--	390	--	.0
FEB										
18...	<10	1	470	<100	1	110	100	200	200	.0
MAR										
18...	<10	--	11000	<100	--	30	--	140	--	.0
APR										
06...	10	5	4200	<100	2	20	10	100	20	.0
JUN										
16...	0	--	500	6	--	70	--	80	--	<.5
SEP										
09...	--	0	--	--	2	--	110	--	70	--

06178500 EAST PDPLAR RIVER AT INTERNATIDNAL BDUNDARY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MC) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
06...	--	1	--	<50	--	0	--	--	10	--
DEC										
19...	--	2	--	<50	--	0	--	--	20	--
FEB										
18...	.0	1	1	<50	0	0	0	.4	20	10
MAR										
18...	--	2	--	<50	--	1	--	--	70	--
APR										
06...	.0	1	1	<50	4	0	0	2.1	40	30
JUN										
16...	--	3	--	6	--	0	--	--	90	--
SEP										
09...	.0	--	1	--	2	--	0	2.3	--	0

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	12.5	7.5	10.0									
2	14.0	9.0	11.5									
3	14.5	9.5	12.0									
4	13.0	9.5	11.5									
5	12.0	8.0	9.0									
6	---	---	---									
7	---	---	---									
8	---	---	---									
9	---	---	---									
10	---	---	---									
11	---	---	---									
12	---	---	---									
13	---	---	---									
14	---	---	---									
15	---	---	---									
16	---	---	---									
17	---	---	---									
18	---	---	---									
19	---	---	---									
20	---	---	---									
21	---	---	---									
22	---	---	---									
23	---	---	---									
24	---	---	---									
25	---	---	---									
26	---	---	---									
27	---	---	---									
28	---	---	---									
29	---	---	---									
30	---	---	---									
31	---	---	---									
MONTH	---	---	---									

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	FEBRUARY			MARCH			APRIL			MAY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	0.5	0.5	0.5	3.0	1.0	2.0	12.5	7.0	9.5
2	---	---	---	0.5	0.5	0.5	3.0	1.0	2.0	13.0	6.5	9.5
3	---	---	---	0.5	0.0	0.5	4.0	1.0	2.0	12.5	7.5	9.5
4	---	---	---	0.5	0.5	0.5	5.0	1.0	3.0	14.5	7.5	11.0
5	---	---	---	0.5	0.5	0.5	5.5	1.5	3.0	14.0	8.0	11.0
6	---	---	---	0.5	0.5	0.5	6.0	2.5	4.0	15.0	8.5	12.0
7	---	---	---	1.0	0.5	0.5	6.5	2.5	4.0	15.0	9.0	12.0
8	---	---	---	1.0	0.5	1.0	7.5	3.0	5.0	17.0	9.5	13.0
9	---	---	---	1.0	0.5	0.5	8.0	4.0	5.5	16.5	10.0	13.0
10	---	---	---	1.0	0.5	0.5	8.0	4.5	5.5	17.5	10.5	14.0
11	---	---	---	1.0	0.5	0.5	8.5	4.0	6.0	15.0	12.5	13.5
12	---	---	---	1.0	0.5	1.0	9.5	5.5	7.0	13.0	9.5	11.0
13	---	---	---	1.0	0.5	1.0	10.0	6.0	7.5	16.5	9.5	13.0
14	---	---	---	1.0	1.0	1.0	10.0	6.0	8.0	15.0	12.5	14.0
15	---	---	---	1.0	1.0	1.0	10.5	7.0	8.5	15.5	11.0	13.0
16	---	---	---	1.0	0.5	1.0	9.0	6.5	8.0	17.0	11.5	14.5
17	---	---	---	1.0	0.0	0.5	6.5	5.0	6.0	17.0	12.0	14.5
18	1.0	0.0	0.5	1.5	0.0	0.5	9.0	5.0	6.5	18.5	13.5	16.0
19	1.0	0.5	0.5	0.5	0.5	0.5	7.0	6.0	6.5	19.5	13.5	16.5
20	1.0	0.5	0.5	1.5	0.0	0.5	8.5	6.0	7.0	16.5	14.5	15.5
21	1.0	0.5	1.0	0.5	0.5	0.5	8.0	6.0	7.0	20.5	13.0	17.0
22	1.5	0.0	0.5	0.5	0.0	0.5	8.0	6.0	7.0	20.5	16.0	18.0
23	1.0	0.5	1.0	1.0	0.0	0.5	7.0	6.0	6.5	19.0	15.5	17.0
24	1.0	0.5	0.5	1.0	0.5	0.5	8.5	6.0	7.0	17.5	14.0	15.5
25	0.5	0.5	0.5	1.5	0.5	1.0	9.5	6.0	7.5	18.0	13.5	15.5
26	0.5	0.5	0.5	2.0	0.5	1.0	9.5	6.0	7.5	15.0	13.0	14.0
27	0.5	0.5	0.5	2.0	1.0	1.5	9.5	6.5	7.5	20.0	12.0	15.5
28	0.5	0.5	0.5	3.0	0.5	1.5	10.0	6.5	8.0	20.5	15.0	17.5
29	0.5	0.5	0.5	3.5	1.0	2.0	9.5	6.5	8.0	18.5	16.0	17.5
30	---	---	---	4.0	1.0	2.5	12.0	7.0	10.0	19.0	15.0	17.0
31	---	---	---	5.0	1.5	3.0	---	---	---	21.0	16.5	19.0
MONTH	---	---	---	5.0	0.0	1.0	12.0	1.0	6.0	21.0	6.5	14.0

	JUNE			JULY			AUGUST			SEPTEMBER		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	24.5	17.5	21.0	21.5	15.5	19.0	22.5	18.5	21.0	19.0	16.0	17.5
2	26.0	20.0	22.5	21.0	16.5	17.5	22.5	18.0	20.5	18.5	15.5	17.0
3	23.5	20.0	22.0	21.0	16.0	18.0	22.5	19.5	21.0	18.0	14.5	16.0
4	21.5	18.5	20.0	22.5	16.5	19.0	21.5	19.0	20.5	19.0	15.0	17.0
5	20.0	18.5	19.0	22.5	17.5	20.0	21.5	17.5	19.5	20.0	16.0	18.0
6	20.0	18.0	19.0	24.0	19.5	21.5	22.5	18.5	20.5	19.5	17.0	18.5
7	21.0	18.0	19.5	23.0	19.0	20.5	22.0	19.0	21.0	17.5	13.5	15.5
8	23.0	17.0	20.0	24.0	19.0	21.5	23.0	18.5	21.0	13.5	11.5	12.5
9	23.5	18.0	21.0	24.0	21.5	22.5	22.5	19.0	20.5	14.5	10.5	12.5
10	25.5	18.5	22.0	24.5	21.5	23.0	22.5	19.0	20.5	16.5	11.5	14.0
11	23.5	18.0	21.0	23.0	20.0	22.0	23.5	19.5	21.5	16.0	13.0	15.0
12	21.0	17.0	18.5	23.0	19.5	21.0	25.0	20.0	22.5	16.5	14.0	15.0
13	22.0	16.0	18.5	23.5	20.5	21.5	24.0	21.0	22.5	15.5	13.0	14.0
14	19.0	18.0	18.5	23.0	20.0	21.5	23.0	20.0	21.5	16.5	12.5	14.5
15	21.5	16.0	18.5	22.0	19.0	20.5	22.5	18.5	20.5	18.0	14.0	16.0
16	18.5	16.5	17.5	23.5	19.0	21.0	23.0	19.0	21.0	20.0	15.0	17.0
17	20.5	15.5	18.0	23.5	19.0	21.0	22.5	19.0	21.0	20.0	16.5	18.5
18	22.0	16.0	18.5	23.5	20.0	21.5	21.5	19.0	20.5	19.5	13.5	16.0
19	21.0	15.5	18.5	24.0	20.5	22.0	22.0	19.0	20.5	15.0	11.5	13.5
20	21.5	16.5	19.0	24.0	20.5	22.5	21.0	18.5	19.5	15.5	11.5	13.5
21	22.0	18.0	19.5	24.0	20.0	21.5	21.0	17.0	19.0	16.5	12.5	14.5
22	18.0	17.0	18.0	23.5	19.0	21.0	21.5	17.5	19.5	15.5	13.0	14.5
23	18.5	17.0	17.5	25.5	19.5	22.5	22.5	18.0	20.0	14.5	11.0	13.0
24	19.0	16.0	17.5	24.5	19.0	22.0	20.5	18.0	18.5	14.5	11.0	13.0
25	18.5	16.0	17.0	23.5	19.5	21.5	21.5	17.0	18.5	15.0	12.5	13.5
26	17.5	15.5	16.0	24.5	19.5	22.0	20.0	16.0	18.5	14.0	12.0	13.0
27	17.0	15.0	16.0	22.0	18.5	20.5	16.0	14.0	15.0	12.5	9.5	11.0
28	18.0	15.0	16.5	23.0	17.0	20.0	15.0	13.0	14.0	13.0	9.5	11.0
29	19.5	15.0	17.0	22.0	18.5	20.5	19.0	13.5	15.5	14.0	10.0	12.0
30	20.0	15.0	17.5	21.0	18.0	19.5	18.5	15.5	17.0	15.0	12.0	13.5
31	---	---	---	23.0	18.5	20.5	19.5	16.0	17.5	---	---	---
MONTH	26.0	15.0	19.0	25.5	15.5	21.0	25.0	13.0	19.5	20.0	9.5	14.5
YEAR	26.0	0.0	13.0									

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
NOV					
26...	1100	1.5	.67	60	.11
DEC					
19...	1030	.5	.33	34	.03
JAN					
20...	1030	.5	.70	51	.10
FEB					
18...	1500	1.0	.68	54	.10
MAR					
18...	1200	.0	53	322	46
APR					
08...	1430	4.0	233	108	68
MAY					
20...	1230	16.0	1.4	80	.30
JUN					
16...	1530	17.5	104	33	9.3
JUL					
08...	1300	20.5	173	51	24
AUG					
04...	1330	20.0	26	73	5.1
SEP					
09...	1130	12.0	3.0	43	.35

06179000 EAST FORK POPLAR RIVER NEAR SCOBEY, MT

LOCATION.--Lat 48°51'08", long 105°25'15", in NE¼NW¼ sec.27, T.36 N., R.48 E., Daniels County, Hydrologic Unit 10060003, on right bank at downstream side of bridge on State Highway 13, 2.5 mi (4.0 km) upstream from mouth, and 4 mi (6 km) north of Scobey.

DRAINAGE AREA.--722 mi^2 (1,870 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1935 to October 1939 (no winter records some years), June 1975 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,370.47 ft (722.519 m) above mean sea level (International Boundary Survey datum). Apr. 2, 1935 to Oct. 31, 1939, nonrecording gage on downstream side of old bridge 300 ft (91 m) southeast of present site and at present datum. June 6, 1975 to Aug. 7, 1975, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records fair except those for winter period, which are poor. Flow partially regulated by Coronach Dam, located approximately 2 mi (3 km) north of international boundary, after Sept. 18, 1975. A few small diversions for irrigation above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, about 2,930 ft^3/s (83.0 m^3/s) Mar. 22, 1939, gage height, 9.6 ft (2.93 m), from floodmarks (backwater from ice); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 23, 1975, reached a stage of 6.9 ft (2.10 m), from floodmark, discharge, 3,960 ft^3/s (112 m^3/s), from rating based on step-backwater analysis at site.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge observed, 1,000 ft^3/s (28.3 m^3/s) Mar. 24, gage height, 4.75 ft (1.448 m) backwater from ice; maximum gage height, 5.26 ft (1.603 m) Mar. 19 (backwater from ice); minimum daily discharge, 0.27 ft^3/s (0.008 m^3/s) Jan 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	2.5	1.9	.72	4.5	17	298	17	2.8	112	25	3.1
2	1.6	2.7	1.9	.62	4.5	15	267	79	2.3	19	26	3.0
3	1.4	2.6	2.0	.50	4.5	10	253	86	1.9	41	29	2.8
4	1.2	2.5	2.0	.40	4.0	8.0	246	85	2.7	92	34	2.8
5	1.1	2.5	2.0	.30	2.5	6.0	236	73	21	109	47	2.7
6	1.1	2.6	1.8	.30	1.5	4.5	294	68	23	146	52	2.6
7	.79	2.6	1.6	.27	1.0	3.5	266	57	21	162	26	2.4
8	.79	2.6	1.6	.35	2.0	3.0	239	45	19	194	50	2.4
9	.79	2.6	1.8	.35	4.0	4.0	219	41	68	194	59	2.6
10	.83	2.6	1.6	.35	3.5	16	206	39	21	191	112	2.7
11	.96	2.5	1.2	.35	2.0	13	194	29	21	186	115	2.6
12	1.2	2.6	.95	.35	1.5	8.0	186	13	101	185	24	2.6
13	1.4	2.6	.80	.35	.80	5.0	185	7.8	161	179	14	2.7
14	4.7	2.5	.70	.37	.80	3.5	200	4.5	115	179	9.9	2.8
15	5.7	2.6	.60	.40	.80	3.5	206	3.8	146	179	7.8	3.1
16	5.2	2.7	.50	.40	.70	10	225	3.3	136	179	5.9	3.4
17	5.0	2.8	.42	.38	.60	70	305	2.4	125	185	4.6	3.3
18	4.3	2.8	.35	.36	.55	450	260	2.0	109	186	4.3	3.1
19	3.4	2.6	.50	.35	.55	500	294	1.8	106	191	4.2	3.1
20	3.1	2.5	.60	.40	.55	600	467	1.9	125	188	3.8	3.3
21	2.8	2.3	.70	.50	.55	800	331	1.6	115	191	3.6	3.1
22	2.7	2.1	.68	.70	3.5	860	270	1.8	149	134	4.0	3.0
23	2.6	2.0	.79	1.0	15	940	229	1.7	162	103	3.5	2.7
24	2.5	1.9	.88	3.0	50	1000	203	1.6	185	68	3.4	2.7
25	2.5	1.9	.79	4.0	90	900	182	1.4	200	76	3.5	2.6
26	2.5	1.9	.83	4.0	70	700	173	2.0	197	73	3.5	3.1
27	2.3	1.9	.83	4.5	50	600	164	2.8	191	59	3.3	3.1
28	2.1	1.9	.82	4.5	30	500	155	3.0	182	41	3.3	3.1
29	2.0	1.9	.78	4.5	20	448	115	2.4	176	39	2.8	3.1
30	2.2	1.9	.74	4.5	---	379	21	2.7	170	39	2.7	3.1
31	2.2	---	.74	4.5	---	331	---	2.4	---	28	2.6	---
TOTAL	72.86	71.7	33.60	43.57	369.90	9208.0	6889	685.1	3074.7	3992	670.3	66.9
MEAN	2.35	2.39	1.08	1.41	12.8	297	230	22.1	102	129	21.6	2.90
MAX	5.7	2.6	2.0	4.5	90	1000	467	88	200	194	115	3.4
MIN	.79	1.9	.35	.27	.55	3.0	21	1.4	1.9	19	2.7	2.4
AC-FT	145	142	67	86	734	18260	13660	1360	6100	7920	1330	172

WTR YR 1976 TOTAL 25197.63 MEAN 68.8 MAX 1000 MIN .27 AC-FT 49980

06179000 EAST FORK POPLAR RIVER NEAR SCOBEY, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: July to September 1976.

INSTRUMENTATION.--Temperature recorder since October 14, 1975.

REMARKS.--Temperature recorder inoperative April 1 to May 20.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 26.0°C June 2, July 6, 1976; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 26.0°C June 2, July 6; minimum, 0.0°C on many days during December to March.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	HARDNESS (CA,MG) (MG/L)
OCT										
07...	1115	.79	--	--	10.5	10.5	--	--	--	330
NOV										
25...	1600	1.9	--	--	12.0	.0	--	--	--	370
JAN										
19...	1600	.38	--	--	--	.0	--	--	--	420
MAR										
18...	1430	424	--	--	--	.0	--	--	--	58
APR										
21...	1430	329	--	--	4.0	9.0	--	--	--	120
MAY										
21...	1230	1.8	--	--	--	15.0	--	--	--	250
JUL										
08...	1530	195	1310	8.9	29.0	25.0	10	7.4	97	220
AUG										
03...	1430	28	1360	8.8	24.0	20.5	10	8.0	95	250
SEP										
09...	1600	2.8	1630	8.8	18.5	15.5	7	9.2	100	300

DATE	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)
OCT									
07...	0	33	61	300	7.1	17	739	--	370
NOV									
25...	0	44	63	260	5.9	15	757	--	330
JAN									
19...	0	57	68	320	6.8	12	797	33	390
MAR									
18...	0	13	6.3	11	.6	6.2	86	--	18
APR									
21...	0	23	14	60	2.4	9.0	185	--	93
MAY									
21...	0	36	38	160	4.4	13	486	--	210
JUL									
08...	0	28	37	230	6.7	20	427	51	280
AUG									
03...	0	36	39	230	6.3	20	476	44	260
SEP									
09...	0	37	50	280	7.1	21	607	49	330

06179000 EAST FORK POPLAR RIVER NEAR SCOBEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)
OCT									
07...	8.6	.3	3.3	1160	1.58	2.47	--	.00	--
NOV									
25...	10	.3	3.9	1100	1.50	5.64	--	.00	--
JAN									
19...	10	.4	9.1	1290	1.75	1.32	--	.01	--
MAR									
18...	.6	.1	3.5	104	.14	119	--	.68	--
APR									
21...	2.8	.3	4.5	300	.41	266	--	.33	--
MAY									
21...	5.6	.2	3.2	708	.96	3.54	--	.30	--
JUL									
08...	8.2	.1	2.6	869	1.18	458	.00	--	.00
AUG									
03...	8.4	.2	.4	875	1.19	66.1	.00	--	.00
SEP									
09...	11	.3	1.0	1080	1.47	8.16	.00	--	.00

DATE	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)
OCT									
07...	--	--	--	--	.00	.00	1900	30	10
NOV									
25...	--	--	--	--	.00	.00	1800	50	20
JAN									
19...	--	--	--	--	.00	.00	1100	40	100
MAR									
18...	--	--	--	--	.15	.05	110	120	40
APR									
21...	--	--	--	--	.12	.04	460	130	10
MAY									
21...	--	--	--	--	.03	.01	1100	10	10
JUL									
08...	1.3	1.3	1.3	.23	.52	.17	1600	60	--
AUG									
03...	1.4	1.4	1.4	.21	.21	.07	1700	40	--
SEP									
09...	1.3	1.3	1.3	.24	.03	.01	2000	40	20

DATE	TIME	DIS-SOLVED ALUM-INUM (AL) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)
SEP								
09...	1600	0	4	0	1	0	0	0

DATE	DIS-SOLVED LITHIUM (LI) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
SEP							
09...	110	.0	1	4	0	3.5	0

06179000 EAST FORK POPLAR RIVER NEAR SCOBEY, MT--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	5.0	3.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
2	---	---	---	4.5	4.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0
3	---	---	---	5.5	3.5	4.5	0.0	0.0	0.0	0.0	0.0	0.0
4	---	---	---	7.0	5.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0
5	---	---	---	6.5	5.5	6.0	0.0	0.0	0.0	0.0	0.0	0.0
6	---	---	---	6.0	5.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0
7	---	---	---	5.0	4.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0
8	---	---	---	4.0	3.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0
9	---	---	---	3.0	2.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
10	---	---	---	2.5	1.5	2.0	0.0	0.0	0.0	0.0	0.0	0.0
11	---	---	---	2.0	1.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
12	---	---	---	1.5	1.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
13	---	---	---	2.0	1.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
14	4.5	4.0	4.5	3.0	1.5	2.0	0.0	0.0	0.0	0.0	0.0	0.0
15	5.5	3.0	4.5	3.0	2.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
16	5.5	4.5	5.0	3.0	2.0	3.0	---	---	---	0.0	0.0	0.0
17	8.0	4.5	6.0	3.0	2.0	2.5	---	---	---	0.0	0.0	0.0
18	9.5	6.0	7.5	2.5	1.5	2.0	---	---	---	0.0	0.0	0.0
19	8.5	6.5	7.5	1.5	1.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
20	7.5	6.5	7.5	1.5	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
21	7.0	5.5	6.0	1.5	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
22	6.0	5.0	5.5	1.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
23	5.0	3.5	4.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
24	4.0	3.0	3.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
25	4.0	2.5	3.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
26	4.5	3.0	3.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
27	3.0	1.5	2.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
28	3.0	1.0	2.0	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
29	3.5	2.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	4.5	2.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	4.5	4.0	4.0	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
MONTH	---	---	---	7.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0

	FEBRUARY			MARCH			APRIL			MAY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	0.0	0.0	0.0	0.0	0.0	0.0	5.0	3.0	4.5	---	---	---
2	0.0	0.0	0.0	---	---	---	4.0	1.5	2.5	---	---	---
3	0.0	0.0	0.0	---	---	---	4.5	1.5	3.0	---	---	---
4	0.0	0.0	0.0	---	---	---	6.5	2.5	4.5	---	---	---
5	0.0	0.0	0.0	---	---	---	8.0	4.0	6.0	---	---	---
6	0.0	0.0	0.0	---	---	---	8.5	5.0	6.5	---	---	---
7	0.0	0.0	0.0	---	---	---	9.0	5.5	7.0	---	---	---
8	0.0	0.0	0.0	0.0	0.0	0.0	10.0	6.0	8.0	---	---	---
9	0.0	0.0	0.0	0.0	0.0	0.0	11.0	7.5	9.0	---	---	---
10	0.0	0.0	0.0	0.0	0.0	0.0	10.0	7.5	9.0	---	---	---
11	0.0	0.0	0.0	0.0	0.0	0.0	9.0	5.5	7.0	---	---	---
12	0.0	0.0	0.0	0.0	0.0	0.0	11.0	7.0	9.0	---	---	---
13	0.0	0.0	0.0	---	---	---	12.5	9.5	11.0	---	---	---
14	0.0	0.0	0.0	0.0	0.0	0.0	11.0	9.0	10.0	---	---	---
15	0.0	0.0	0.0	0.0	0.0	0.0	11.0	8.0	9.5	---	---	---
16	0.0	0.0	0.0	0.0	0.0	0.0	10.0	6.5	9.0	---	---	---
17	0.0	0.0	0.0	0.0	0.0	0.0	6.5	3.5	4.5	---	---	---
18	0.0	0.0	0.0	0.0	0.0	0.0	6.0	3.0	4.5	---	---	---
19	0.0	0.0	0.0	0.0	0.0	0.0	7.5	5.0	6.0	---	---	---
20	0.0	0.0	0.0	---	---	---	8.5	6.0	7.0	16.5	14.5	15.5
21	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---	20.5	13.0	17.0
22	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---	20.5	16.0	18.0
23	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---	19.0	15.5	17.0
24	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---	17.5	14.0	15.5
25	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---	18.0	13.5	15.5
26	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---	15.0	13.0	14.0
27	0.0	0.0	0.0	0.5	0.0	0.5	---	---	---	20.0	12.0	15.5
28	0.0	0.0	0.0	1.5	0.0	0.5	---	---	---	20.5	15.0	17.5
29	0.0	0.0	0.0	3.5	0.5	2.0	---	---	---	18.5	16.0	17.5
30	---	---	---	5.5	2.0	3.5	---	---	---	19.0	15.0	17.0
31	---	---	---	7.0	3.0	5.0	---	---	---	21.0	16.5	19.0
MONTH	0.0	0.0	0.0	---	---	---	---	---	---	---	---	---

06179000 EAST FORK POPLAR RIVER NEAR SCOBEY, MT--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	JUNE			JULY			AUGUST			SEPTEMBER		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	24.5	17.5	21.0	22.0	17.5	20.0	22.5	18.0	20.5	19.5	15.5	17.5
2	26.0	20.0	22.5	20.0	18.5	19.0	22.5	18.0	20.5	17.5	15.0	16.5
3	23.5	20.0	22.0	22.5	17.5	19.5	22.5	19.5	21.0	19.0	14.0	16.5
4	21.5	18.5	20.0	24.0	19.0	21.5	21.5	19.5	20.5	18.5	14.0	16.5
5	20.0	18.5	19.0	24.5	20.5	22.5	20.5	18.0	19.0	19.0	15.5	17.0
6	20.0	18.0	19.0	26.0	21.5	23.5	22.5	18.0	20.0	19.0	16.5	17.5
7	21.0	18.0	19.5	24.5	22.0	23.0	22.0	18.5	20.5	17.5	14.5	16.0
8	23.0	17.0	20.0	25.5	22.5	23.5	24.0	18.5	21.5	14.5	12.0	13.0
9	23.5	18.0	21.0	25.0	22.5	23.5	22.0	19.5	20.5	15.0	11.0	13.0
10	25.5	20.5	23.0	25.0	22.5	23.5	22.0	18.5	20.0	16.0	12.0	14.0
11	25.0	20.5	23.0	24.5	22.5	23.0	23.0	19.5	21.0	16.0	12.5	14.5
12	22.5	16.5	19.5	23.0	21.0	22.0	24.0	20.5	22.5	16.0	14.0	15.0
13	18.5	15.5	17.0	23.0	20.5	21.5	25.0	21.5	23.0	16.5	13.0	14.0
14	17.5	16.0	17.0	23.0	20.0	21.5	24.0	19.0	21.5	17.0	12.0	14.5
15	19.5	15.5	17.5	22.0	19.5	20.5	23.0	18.0	20.5	18.0	13.5	15.5
16	18.0	16.5	17.5	23.0	19.0	21.0	23.0	19.0	21.0	20.5	14.0	17.0
17	19.0	15.5	17.0	24.5	20.5	22.5	23.5	18.5	21.0	21.0	16.0	18.5
18	20.5	15.5	18.0	25.0	22.5	23.5	21.5	18.0	20.0	19.5	13.0	15.5
19	21.5	17.0	19.0	24.5	22.0	23.5	21.5	19.0	20.0	16.5	11.5	13.5
20	23.0	19.5	21.0	24.0	21.5	22.5	21.0	18.0	19.5	16.5	11.5	13.5
21	23.0	19.5	21.0	24.0	20.5	22.0	21.0	16.5	18.5	17.0	11.5	14.0
22	20.0	17.5	19.0	24.0	21.0	22.5	22.5	17.5	19.5	15.0	11.5	13.5
23	17.5	16.5	17.0	25.5	20.5	23.0	23.0	17.0	20.0	14.0	10.5	12.5
24	17.5	15.5	16.5	25.5	20.5	23.0	21.5	18.5	19.0	14.5	10.5	13.0
25	17.0	15.5	16.0	25.0	21.5	23.0	22.5	17.0	19.5	14.5	11.5	13.5
26	16.5	15.0	15.5	25.0	21.0	23.0	20.0	17.0	18.5	13.5	11.0	12.0
27	16.0	15.0	15.5	22.5	19.5	21.0	17.0	13.5	15.0	12.5	9.0	10.5
28	17.0	15.5	16.0	22.5	18.0	20.5	16.0	12.5	14.0	13.0	9.0	11.0
29	19.5	15.5	17.0	22.5	18.5	20.5	20.0	13.5	16.5	13.5	9.5	12.0
30	21.0	17.0	19.0	21.0	18.5	20.0	19.0	15.5	17.5	15.0	11.5	13.0
31	---	---	---	22.5	18.0	20.5	19.5	15.5	17.5	---	---	---
MONTH	26.0	15.0	19.0	26.0	17.5	22.0	25.0	12.5	19.5	21.0	9.0	14.5
YEAR	26.0	0.0	9.0									

06179200 POPLAR RIVER ABOVE WEST FORK, NEAR BREDETTE, MT

LOCATION.--Lat 48°33'05", long 105°21'55", in NW¼SW¼SW¼ sec.4, T.32 N., R.49 E., Roosevelt County, Hydrologic Unit 10060004, on county road bridge, 3.8 mi (6.1 km) upstream from mouth and 4.4 mi (7.1 km) northwest of Bredette.

DRAINAGE AREA.--2,340 mi² (6,062 km²).

PERIOD OF RECORD.--July to September 1976.

WATER QUALITY DATA, JULY TO OCTOBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)
JUL 09...	1200	300	812	8.4	26.0	23.0	240	6.2	78	160	0	27
AUG 05...	0930	45	1550	8.9	14.0	17.5	20	7.6	85	270	0	39
SEP 08...	1600	15	1500	8.6	14.0	14.5	3	9.0	95	260	0	29

DATE	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)
JUL 09...	23	120	4.1	12	359	0	140	5.3	.2	6.5	512	.70
AUG 05...	41	250	6.7	15	565	12	280	12	.3	4.1	933	1.27
SEP 08...	46	270	7.3	12	385	123	300	17	.5	6.8	996	1.35

DATE	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO PHOSPHATE (PO4) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
JUL 09...	415	.19	.06	1.6	1.7	1.9	.41	.18	.06	850	70	--
AUG 05...	113	.01	.00	1.0	1.0	1.0	.15	.00	.00	1500	40	--
SEP 08...	40.3	.03	.00	.71	.71	.74	.10	.03	.01	1600	20	0

DATE	TIME	DISSOLVED ALUMINUM (AL) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)
SEP 08...	1600	0	3	0	0	0	0	0

DATE	DISSOLVED LITHIUM (LI) (UG/L)	DISSOLVED MERCURY (HG) (UG/L)	DISSOLVED MOLYBDENUM (MO) (UG/L)	DISSOLVED NICKEL (NI) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	DISSOLVED VANADIUM (V) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
SEP 08...	110	.0	2	3	0	2.9	0

06179500 WEST FORK POPLAR RIVER AT INTERNATIONAL BOUNDARY

LOCATION.--Lat 49°00'00", long 106°22'00", in SE¼ sec.5, T.1 N., R.3 W., third meridian, Hydrologic Unit 10060004, at West Poplar River Canadian Customs Post, 100 ft (30.5 m) north of international boundary, 8 mi (12.9 km) upstream from Roanwood Coulee, and 10 mi (16 km) north of Opheim.

DRAINAGE AREA.--139 mi² (360 km²).

PERIOD OF RECORD.--July to September 1976.

WATER QUALITY DATA, JULY TO OCTOBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)
JUL												
07...	1300	.55	1320	9.6	26.0	22.0	25	7.4	90	140	0	14
AUG												
02...	1330	.30	1490	9.9	28.0	21.0	10	7.2	88	140	0	14
SEP												
07...	1330	.14	1370	9.3	13.0	15.0	10	8.0	87	150	0	19

DATE	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)
JUL												
07...	25	270	10	9.0	455	115	190	4.1	.3	2.0	855	1.16
AUG												
02...	26	290	11	11	445	141	190	5.1	.4	.8	899	1.22
SEP												
07...	26	280	9.8	11	624	47	160	7.4	.4	.9	861	1.17

DATE	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO PHOSPHATE (PO4) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
JUL												
07...	1.27	.00	.00	1.6	1.6	1.6	.06	.09	.03	1100	120	--
AUG												
02...	.73	.12	.03	1.7	1.7	1.8	.09	.00	.00	1200	100	--
SEP												
07...	.33	.16	.05	1.6	1.6	1.8	.03	.03	.01	1100	80	0

DATE	TIME	DISSOLVED ALUMINUM (AL) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)
SEP								
07...	1330	20	4	10	1	10	0	2

DATE	DISSOLVED LITHIUM (LI) (UG/L)	DISSOLVED MERCURY (HG) (UG/L)	DISSOLVED MOLYBDENUM (MO) (UG/L)	DISSOLVED NICKEL (NI) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	DISSOLVED VANADIUM (V) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
SEP							
07...	150	.0	1	2	0	4.0	0

06180200 WEST FORK POPLAR RIVER NEAR FOUR BUTTES, MT

LOCATION.--Lat 48°37'27", long 105°39'18", in SE¼SE¼ sec.11, T.33 N., R.46 E., Daniels County, Hydrologic Unit 10060004, on county road crossing, 0.9 mi (1.4 km) south of Fort Peck Indian Reservation boundary, 6.8 mi (10.9 km) upstream from Cottonwood Creek and 12.5 mi (20.1 km) southwest of Four Buttes.

DRAINAGE AREA.--732 mi^2 (1,896 km^2).

PERIOD OF RECORD.--August 1975 to June 1976 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)
NOV									
25...	1015	8.2	-12.0	.0	190	0	36	24	200
JAN									
21...	1100	1.7	--	.0	190	0	37	24	190
MAR									
17...	1030	2.1	--	.0	170	0	32	22	170
APR									
20...	1030	23	11.0	6.0	150	0	29	20	130
MAY									
19...	1330	6.5	23.0	17.0	170	0	35	21	160

DATE	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)
NOV									
25...	6.3	5.2	622	--	120	5.9	.5	9.5	708
JAN									
21...	6.0	4.5	599	--	120	5.6	.4	9.8	687
MAR									
17...	5.7	5.9	535	--	97	4.4	.4	9.7	606
APR									
20...	4.5	6.0	425	21	69	4.4	.4	7.6	497
MAY									
19...	5.3	5.1	537	--	92	4.5	.4	6.3	590

DATE	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED ORTHO PHOSPHATE (PO4) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
NOV								
25...	.96	15.7	.00	.00	.00	530	90	5
JAN								
21...	.93	3.15	.01	.00	.00	410	30	20
MAR								
17...	.82	3.47	.01	.00	.00	330	180	30
APR								
20...	.68	31.1	.00	.03	.01	310	130	20
MAY								
19...	.80	10.4	--	.03	.01	420	30	20

06180400 WEST FORK POPLAR RIVER NEAR BREDETTE, MT

LOCATION.--Lat 48°33'01", long 105°25'42", in SW¼SW¼ sec.1, T.32 N., R.48 E., Roosevelt County, Hydrologic Unit 10060004, at bridge on State Highway 13, 5.9 mi (9.5 km) upstream from mouth and 6.6 mi (10.6 km) northwest of Bredette.

DRAINAGE AREA.--1,010 mi² (1,625 km²).

PERIOD OF RECORD.--July to September 1976

WATER QUALITY DATA, JULY TO OCTOBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)
JUL												
08...	1900	150	637	8.6	24.5	25.5	45	7.0	92	120	0	24
AUG												
05...	1230	5.8	1110	8.5	15.5	17.0	15	8.0	90	110	0	20
SEP												
08...	1400	3.1	1220	8.7	13.5	13.0	20	9.2	94	99	0	15

DATE	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)
JUL												
08...	14	100	4.0	7.1	356	0	54	3.6	.3	14	393	.53
AUG												
05...	15	230	9.5	5.3	572	12	130	6.1	.4	7.0	708	.96
SEP												
08...	15	260	11	4.9	546	48	140	7.5	.5	6.3	767	1.04

DATE	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO PHOSPHATE (PO4) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
JUL												
08...	159	.01	.00	.94	.94	.95	.09	.12	.04	370	120	--
AUG												
05...	11.1	.01	.00	.47	.47	.48	.07	.03	.01	610	40	--
SEP												
08...	6.42	.17	.00	.40	.40	.57	.06	.06	.02	690	40	0

DATE	TIME	DISSOLVED ALUMINUM (AL) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)
SEP								
08...	1400	30	3	0	0	0	0	0

DATE	DISSOLVED LITHIUM (LI) (UG/L)	DISSOLVED MERCURY (HG) (UG/L)	DISSOLVED MOLYBDENUM (MO) (UG/L)	DISSOLVED NICKEL (NI) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	DISSOLVED VANADIUM (V) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
SEP							
08...	110	.0	2	2	0	2.6	0

06181000 POPLAR RIVER NEAR POPLAR, MT

LOCATION.--Lat 48°10'15", long 105°10'42", in NE¼NE¼ sec.19, T.28 N., R.51 E., Roosevelt County, Hydrologic Unit 10060003, on right bank 4 mi (6 km) north of Poplar and 11 mi (18 km) upstream from mouth.

DRAINAGE AREA.--3,174 mi^2 (8,221 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1908 to October 1924, August 1947 to September 1969, June 1975 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1176: 1948. WSP 1389: 1911. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,970 ft (600 m), from topographic map. Prior to May 1, 1911, nonrecording gage at site 4.2 mi (6.8 km) upstream at different datum. May 1, 1911, to Oct. 4, 1913, nonrecording gage at site 14 mi (23 km) upstream at different datum. Oct. 5, 1913, to Oct. 31, 1924, nonrecording gage at site 2.2 mi (3.5 km) upstream at different datum. Aug. 10, 1947, to Sept. 30, 1969, water-stage recorder at present site and datum.

REMARKS.--Water-discharge records good except those for winter period, which are poor. Diversions for irrigation of about 5,500 acres (22.3 km^2) above station.

AVERAGE DISCHARGE.--39 years (1908-24, 1947-69, 1975-76), 136 ft^3/s (3.852 m^3/s), 98,460 acre-ft/yr (121 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,400 ft^3/s (1,060 m^3/s) Apr. 6, 1954, gage height, 17.86 ft (5.444 m), from floodmark; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 10, 1946, reached a stage of 18.1 ft (5.52 m), from floodmark, discharge, 40,000 ft^3/s (1,130 m^3/s), from slope-area measurement of peak flow made at site 20 mi (32 km) upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft^3/s (14.2 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 20	0100	*13,300	377	*16.70	5.090	June 13	0700	917	26.0	5.72	1.743
Apr. 24	1030	647	18.3	4.99	1.521	July 8	033	787	22.3	5.38	1.640

Minimum daily discharge, 6.0 ft^3/s (0.17 m^3/s) Jan. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	39	24	14	21	60	840	245	53	251	68	27
2	30	39	26	11	20	50	724	201	53	236	64	25
3	29	39	29	8.0	20	40	634	175	53	238	61	25
4	28	39	29	8.0	18	35	576	167	52	332	58	25
5	28	39	27	7.5	16	36	563	161	53	222	61	22
6	28	39	25	7.0	20	37	513	175	53	191	59	21
7	29	37	23	7.0	22	36	457	169	127	250	59	21
8	28	37	24	6.5	25	36	459	163	177	706	62	22
9	29	37	25	6.0	26	35	411	154	182	504	82	21
10	30	37	23	7.0	27	35	374	148	344	388	90	21
11	28	37	22	8.0	31	34	340	139	396	325	69	22
12	29	34	20	12	32	32	335	141	458	287	95	22
13	31	33	18	12	34	34	317	131	806	260	110	22
14	39	40	16	10	34	34	296	133	485	236	107	22
15	41	43	14	12	37	36	269	117	383	222	84	21
16	49	40	10	12	43	37	296	105	332	209	68	21
17	48	40	12	16	50	60	305	92	298	199	62	21
18	45	40	14	14	60	250	312	85	284	189	58	22
19	44	29	12	11	70	1400	363	81	260	183	51	22
20	44	29	12	12	65	12200	332	78	230	173	46	25
21	44	27	11	13	70	11000	383	73	197	167	44	25
22	43	26	10	15	80	6700	451	73	213	165	41	22
23	43	24	10	17	90	3550	462	68	267	158	37	19
24	41	22	12	16	100	2990	604	65	303	148	36	19
25	41	20	14	14	110	2680	445	65	374	128	36	19
26	40	19	16	14	100	2440	366	66	330	107	32	19
27	40	20	20	18	85	2150	315	68	312	95	29	19
28	39	19	18	20	80	1770	291	61	317	89	31	19
29	39	19	18	20	75	1460	273	59	307	84	29	20
30	37	20	20	20	---	1170	262	59	260	79	28	21
31	39	---	21	18	---	961	---	56	---	74	27	---
TOTAL	1133	963	575	386.0	1461	51388	12568	3595	7979	6897	1804	652
MEAN	36.5	32.1	18.5	12.5	50.4	1658	420	116	266	222	58.2	21.7
MAX	49	43	29	20	110	12200	840	245	806	706	110	27
MIN	28	19	10	6.0	16	32	262	56	52	74	27	19
AC-FT	2250	1910	1140	766	2900	101900	24970	7130	15830	13680	3580	1290

WTR YR 1976 TOTAL 89421.0 MEAN 244 MAX 12200 MIN 6.0 AC-FT 177400

06181000 POPLAR RIVER NEAR POPLAR, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	FECAL STREPTOCOCCI KF AGAR (COL. PER 100 ML)
DEC												
23...	1330	10	2150	8.3	-2.0	.0	2	9.2	68	--	2	<1
MAR												
16...	1500	37	980	8.0	7.5	.0	10	6.6	49	4	<1	--
APR												
07...	1430	444	590	8.2	21.0	11.0	35	8.9	87	4	4	--
JUN												
22...	1530	221	1080	8.5	21.0	20.5	50	7.8	93	230	430	--
JUL												
09...	1530	471	920	8.8	28.5	25.0	95	7.0	91	--	--	--
AUG												
06...	1300	60	1390	8.8	27.0	20.0	15	7.2	85	--	--	--
SEP												
10...	1230	21	1550	8.7	21.5	14.5	3	8.2	86	--	--	--

DATE	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)
DEC												
23...	320	0	53	45	370	9.0	7.9	772	0	290	120	.5
MAR												
16...	180	0	35	23	160	5.2	10	439	0	130	35	.4
APR												
07...	130	0	26	16	79	3.0	8.2	271	0	73	11	.3
JUN												
22...	200	0	31	29	170	5.3	10	462	0	170	15	.3
JUL												
09...	180	0	29	26	150	4.9	11	428	7	140	9.6	.3
AUG												
06...	210	0	26	34	260	7.9	12	517	15	260	38	.4
SEP												
10...	210	0	26	35	290	8.7	10	534	23	250	77	.4

DATE	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	DISSOLVED AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	DISSOLVED ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED KJEL. NITROGEN (N) (MG/L)
DEC												
23...	9.1	1280	1.74	34.6	.01	.01	--	.01	--	.47	.52	.48
MAR												
16...	8.8	620	.84	61.9	.08	.08	--	.13	--	1.2	1.8	1.3
APR												
07...	7.8	356	.48	427	.18	.18	--	.04	--	1.3	1.3	1.3
JUN												
22...	8.7	663	.90	396	.02	.03	--	.01	--	.64	1.1	.65
JUL												
09...	8.7	594	.81	755	.03	--	.01	--	1.4	--	1.4	--
AUG												
06...	3.5	905	1.23	147	.01	--	.02	--	1.1	--	1.1	--
SEP												
10...	5.8	982	1.34	55.7	.03	--	.00	--	.63	--	.63	--

06181000 POPLAR RIVER NEAR POPLAR, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	TOTAL IN-ORGANIC CARBON (C) (MG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BORON (B) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)
DEC												
23...	.53	.00	.00	8.7	153	--	--	1	--	0	1000	--
MAR												
16...	1.9	.08	.01	15	89	--	--	1	--	0	500	--
APR												
07...	1.5	.14	.00	13	129	--	3	1	0	0	290	<10
JUN												
22...	1.1	.13	.01	10	78	--	--	6	--	0	800	--
JUL												
09...	1.4	.11	.02	--	--	--	--	--	--	--	870	--
AUG												
06...	1.1	.06	.01	--	--	--	--	--	--	--	1300	--
SEP												
10...	.66	.05	.01	--	--	0	--	2	--	0	1200	--

DATE	DIS-SOLVED CAD-MIUM (CD) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)
DEC												
23...	0	--	--	--	--	10	--	0	--	--	60	--
MAR												
16...	0	--	--	5	--	130	--	2	--	--	30	--
APR												
07...	0	--	<10	6	2200	120	<100	4	--	90	20	.0
JUN												
22...	0	--	--	0	--	60	--	1	--	--	4	--
JUL												
09...	--	--	--	--	--	110	--	--	--	--	--	--
AUG												
06...	--	--	--	--	--	20	--	--	--	--	--	--
SEP												
10...	1	10	--	0	--	10	--	0	110	--	0	--

DATE	DIS-SOLVED MERCURY (HG) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
DEC								
23...	.2	--	--	--	0	.9	--	0
MAR								
16...	.0	--	--	--	1	1.4	--	10
APR								
07...	.0	--	--	0	0	1.6	40	20
JUN								
22...	<.5	--	--	--	0	.0	--	2
SEP								
10...	.0	2	3	--	0	4.2	--	0

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
DEC					
23...	1330	.0	10	26	.70
MAR					
16...	1500	.0	37	32	3.2
APR					
07...	1430	11.0	444	63	76
JUN					
22...	1530	20.5	221	111	66

06185500 MISSOURI RIVER NEAR CULBERTSON, MT

LOCATION.--Lat 48°07'24", long 104°28'30", in SE¼NW¼ sec.3, T.27 N., R.56 E., Richland County, Hydrologic Unit 10060005, on right bank at downstream side of bridge on State Highway 16, 3 mi (5 km) southeast of Culbertson, 9.6 mi (15.4 km) downstream from Big Muddy Creek, and at mile 1,620.76 (2,607.80 km).

DRAINAGE AREA.--91,557 mi² (237,133 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1941 to December 1951, April 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,883.4 ft (574.06 m) above mean sea level, datum of 1929 (Corps of Engineers bench mark). July 1 to Nov. 6, 1941, water-stage recorder at site 400 ft (120 m) upstream at datum 0.11 ft (0.034 m) higher. Nov. 7, 1941, to Aug. 17, 1950, water-stage recorder at site 580 ft (177 m) downstream at present datum. Aug. 18, 1950, to Dec. 31, 1951, nonrecording gage on bridge at present datum. Apr. 1, 1958, to Nov. 1, 1967, water-stage recorder at site 500 ft (150 m) downstream at present datum.

REVISIONS.--WSP 1729: Drainage area.

REMARKS.--Water-discharge records fair except those for winter period, which are poor. Flow partly regulated by Fort Peck Lake (see p. 152) and many other reservoirs above station. Diversions for irrigation of about 1,030,400 acres (4,170 km²) above station.

AVERAGE DISCHARGE.--26 years (1943-51, 1958-76, after operational level at Fort Peck Lake was reached), 10,730 ft³/s (303.9 m³/s), 7,774,000 acre-ft/yr (9.59 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 78,200 ft³/s (2,210 m³/s) Mar. 26, 1943, gage height, 14.80 ft (4.511 m), from rating curve extended above 30,000 ft³/s (850 m³/s); maximum gage height, 19.14 ft (5.834 m) Mar. 23, 1960 (backwater from ice); minimum daily discharge, 575 ft³/s (16.3 m³/s) Nov. 22, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 32,900 ft³/s (932 m³/s) June 14; maximum gage height observed, 16.98 ft (5.176 m), Mar. 22 (backwater from ice); minimum daily discharge, 8.200 ft³/s (232 m³/s) Jan. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13700	14900	10000	15000	17000	17500	21500	15500	19200	17500	14600	14900
2	14200	14900	9800	14000	16500	16000	21300	15300	19100	17100	14300	14900
3	14100	15000	9500	12500	16000	15000	20600	15100	18800	17100	14400	14900
4	14000	15100	9700	11000	14000	13000	19800	14800	25800	16000	14000	14800
5	14000	15200	10500	10500	14000	13000	20900	14300	23000	18600	14200	14800
6	14000	15200	11000	10500	14000	13000	21500	12000	24900	19000	14500	14800
7	14000	15200	11000	10000	15000	14000	21600	11200	26200	20600	14500	14800
8	14000	15400	12000	9400	16000	15500	21000	10700	30000	20700	14100	14700
9	14000	15500	13000	8200	17000	17000	20100	10200	25300	21100	14100	14900
10	14100	15400	13500	9000	18000	17500	19500	10100	24700	19200	13600	15000
11	13800	15300	14000	9800	18500	18000	19100	10200	24700	17400	15300	14800
12	14000	15300	14000	10500	18500	18000	18400	9950	28000	17200	15300	14800
13	14100	15200	14000	11000	18000	17000	18000	9580	30600	17300	15200	14900
14	14400	15100	13500	12000	18000	18000	17500	9760	32900	17000	15100	15000
15	14700	15000	12500	13000	18000	19000	17500	9920	30800	17400	14800	14900
16	14900	15100	11000	14000	18000	21000	17300	13900	28500	17700	15200	14900
17	14900	15100	10500	15000	18000	23000	16900	13400	27200	17300	15300	14300
18	15000	15200	10500	16000	18000	24000	16800	13500	26900	17500	15300	14200
19	15300	15300	11500	16500	18000	25000	16200	13500	27400	17400	15300	14300
20	15300	15100	12500	16500	17500	27000	16400	14400	25000	16900	15100	14800
21	15100	14900	12500	16000	18000	29000	16300	16900	24000	16300	14000	14900
22	15000	14800	12500	16500	18500	30000	16300	19400	20400	16300	13500	14700
23	15000	14800	13000	17000	19000	28000	16200	19700	17500	16000	13300	14700
24	14900	14900	14000	17000	19000	27100	16700	19600	18400	16700	14500	14800
25	14900	14800	15000	17000	19000	24500	16600	19400	17600	15600	14700	14800
26	15000	14800	15500	17000	19000	25600	16100	19400	17800	15800	14600	14600
27	14700	14800	16000	17000	19000	24900	15800	19400	18400	15600	14700	14800
28	14700	14400	16000	18000	18500	23700	15900	19300	18200	16200	14700	14700
29	14700	12400	16000	18500	18000	22500	15500	19100	17600	14900	14600	14900
30	14800	11200	16000	18000	---	22600	15100	19100	17500	14800	14600	14600
31	14800	---	15500	17000	---	22100	---	19300	---	14700	14600	---
TOTAL	450100	445300	396000	433400	506000	641500	542400	457910	706400	532900	452000	442900
MEAN	14520	14840	12770	13980	17450	20690	18080	14770	23550	17190	14580	14760
MAX	15300	15500	16000	18500	19000	30000	21600	19700	32900	21100	15300	15000
MIN	13700	11200	9500	8200	14000	13000	15100	9580	17500	14700	13300	14200
AC-FT	892800	883300	785500	859600	1004000	1272000	1076000	908300	1401000	1057000	896500	878500

CAL YR 1975 TOTAL 6368900 MEAN 17450 MAX 39000 MIN 5200 AC-FT 12630000
WTR YR 1976 TOTAL 6006810 MEAN 16410 MAX 32900 MIN 8200 AC-FT 11910000

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued
(National Stream Quality Accounting Network)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946, 1965 to current year.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1965 to current year.
WATER TEMPERATURES: July 1965 to current year.
SUSPENDED SEDIMENT DISCHARGE: October 1971 to September 1976 (discontinued).
REMARKS.--Prior to July 1972, sediment sampling and record computation under supervision of Corps of Engineers, U.S. Army. Flow affected by ice during most of winter months. Flow regulated by upstream reservoirs.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 807 micromhos May 10, 1970; minimum daily, 338 micromhos Mar. 30, 1967.
WATER TEMPERATURES: Maximum daily, 24.5°C July 17, 1966; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily, 2,940 mg/L Aug. 15, 1974; minimum daily, 30 mg/L Jan. 13, 1975.
SEDIMENT LOADS: Maximum daily, 147,000 tons (133,000 tonnes) June 5, 1975; minimum daily, 421 tons (382 tonnes) Jan. 13, 1975.
EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 762 micromhos Jan. 7; minimum daily, 445 micromhos Mar. 24.
WATER TEMPERATURES: Maximum daily, 21.0°C July 11; minimum daily, 0.0°C on many days during November to March.
SEDIMENT CONCENTRATIONS: Maximum daily, 1,680 mg/L Mar. 25, 26; minimum daily, 39 mg/L Jan. 11.
SEDIMENT LOADS: Maximum daily, 118,000 tons (107,000 tonnes) June 4; minimum daily, 1,030 tons (934 tonnes) Jan. 11.
REVISION.--The figure of suspended sediment concentration for June 13, 1972 has been revised to 176 mg/L, superseding figure previously published.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	FECAL COLIFORM (COL. PER 100 ML)	FECAL STREPTOCOCCI KF AGAR (COL. PER 100 ML)
OCT											
21...	1500	15500	655	8.4	10.5	10.0	45	9.5	90	19	34
NOV											
26...	1130	14000	650	8.6	-10.0	.5	20	11.0	83	4	8
DEC											
31...	1200	15000	670	8.6	-10.0	.0	20	10.4	77	4	5
JAN											
27...	1500	16900	660	8.5	6.0	.5	15	11.7	87	8	2
FEB											
26...	1300	18900	630	8.3	1.0	.5	50	10.7	80	12	52
MAR											
26...	1400	25700	495	8.3	7.0	3.5	350	10.0	81	60	230
APR											
28...	1200	16000	680	9.0	12.5	7.0	40	7.9	70	4	9
MAY											
28...	1000	19300	640	8.3	17.5	13.5	45	7.7	79	8	13
JUN											
10...	1330	24500	620	8.0	22.0	20.0	180	8.0	94	190	460
JUL											
13...	1400	16900	650	8.2	22.0	20.0	70	7.6	90	160	180
AUG											
11...	1400	15100	640	8.1	22.5	18.5	55	8.0	91	140	160
SEP											
14...	1300	15100	640	7.9	19.5	15.0	25	7.4	78	11	26

DATE	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)
OCT											
21...	220	69	57	20	52	1.5	4.1	182	4	1.2	180
NOV											
26...	220	65	55	20	51	1.5	3.9	181	4	.8	170
DEC											
31...	230	69	61	20	53	1.5	3.9	192	6	.8	160
JAN											
27...	220	67	57	20	50	1.5	4.0	192	0	1.0	170
FEB											
26...	210	66	53	20	48	1.4	4.1	181	0	1.5	160
MAR											
26...	150	35	36	15	41	1.4	4.7	142	0	1.1	110
APR											
28...	230	62	53	23	58	1.7	4.5	201	0	.3	180
MAY											
28...	220	70	52	22	46	1.3	4.1	184	0	1.5	180
JUN											
10...	220	66	52	21	51	1.5	4.4	183	0	2.9	160
JUL											
13...	210	59	51	21	56	1.7	4.4	189	0	1.9	180
AUG											
11...	230	79	57	21	47	1.4	4.0	183	0	2.3	160
SEP											
14...	230	77	54	22	48	1.4	3.8	181	0	3.6	170

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT											
21...	8.5	.7	7.1	420	.57	17600	.07	.80	.87	.10	--
NOV											
26...	7.7	.6	7.5	406	.55	15300	.11	.85	.96	.03	--
DEC											
31...	8.5	.6	7.3	416	.57	16800	.12	.31	.43	.04	6.7
JAN											
27...	7.7	.7	7.3	418	.57	19100	.15	.40	.55	.05	--
FEB											
26...	9.0	.6	6.7	403	.55	20600	.14	.47	.61	.12	--
MAR											
26...	4.5	.4	5.6	316	.43	21900	.22	3.1	3.3	.49	--
APR											
28...	7.5	.7	6.5	445	.61	19200	.07	.33	.40	.09	--
MAY											
28...	8.7	.6	8.0	421	.57	21900	.09	.45	.54	.13	--
JUN											
10...	7.3	.6	7.9	369	.50	24400	.10	.60	.70	.30	6.3
JUL											
13...	7.6	.6	7.6	439	.60	20000	.16	.78	.94	.13	--
AUG											
11...	7.7	.6	7.9	413	.56	16800	.15	.43	.58	.14	--
SEP											
14...	7.8	.6	7.9	418	.57	17000	.01	.16	.17	.08	5.0

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
DEC												
31...	1200	4	2	<10	0	10	0	<50	0	20	3	1800
MAR												
26...	1400	20	2	<10	1	30	0	<50	0	50	4	30000
JUN												
10...	1330	6	0	0	0	10	<0	6	0	20	0	9400
SEP												
14...	1300	4	2	<10	1	0	0	<50	0	10	1	2600

DATE	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
DEC											
31...	20	<100	0	40	0	.0	.0	1	0	30	10
MAR											
26...	20	<100	3	610	10	.0	.0	2	0	140	20
JUN											
10...	10	9	5	180	0	<.5	<.5	0	0	70	10
SEP											
14...	0	<100	8	60	0	.0	.0	1	1	30	10

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TOTAL ATRAZINE (UG/L)	ATRAZINE IN BOTTOM MATERIAL (UG/KG DRY SOLIDS)	TOTAL ALDRIN (UG/L)	ALDRIN IN BOTTOM MATERIAL (UG/KG)	TOTAL CHLORDANE (UG/L)	CHLORDANE IN BOTTOM MATERIAL (UG/KG)	TOTAL DDD (UG/L)	DDD IN BOTTOM MATERIAL (UG/KG)	TOTAL DDE (UG/L)	DDE IN BOTTOM MATERIAL (UG/KG)	TOTAL DDT (UG/L)
DEC 31...	1200	ND	--	ND	--	ND	--	ND	--	ND	--	ND
JUN 10...	1330	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG 11...	1400	--	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	DDT IN BOTTOM MATERIAL (UG/KG)	TOTAL DIAZINON (UG/L)	DIAZINON IN BOTTOM MATERIAL (UG/KG)	TOTAL DIELDRIN (UG/L)	DIELDRIN IN BOTTOM MATERIAL (UG/KG)	TOTAL ENDRIN (UG/L)	ENDRIN IN BOTTOM MATERIAL (UG/KG)	TOTAL ETHION (UG/L)	ETHION IN BOTTOM MATERIAL (UG/KG)	TOTAL HEPTACHLOR (UG/L)	HEPTACHLOR IN BOTTOM MATERIAL (UG/KG)	TOTAL HEPTACHLOR EPOXIDE (UG/L)
DEC 31...	--	NO	--	ND	--	ND	--	ND	--	ND	--	NO
JUN 10...	NO	NO	ND	ND	NO	NO	NO	ND	ND	ND	NO	ND
AUG 11...	--	NO	--	NO	--	ND	--	ND	--	ND	--	ND

DATE	HEPTACHLOR EPOXIDE IN BOTTOM MATERIAL (UG/KG)	TOTAL LINDANE (UG/L)	LINDANE IN BOTTOM MATERIAL (UG/KG)	TOTAL MALATHION (UG/L)	MALATHION IN BOTTOM MATERIAL (UG/KG)	TOTAL METHOXYCHLOR (UG/L)	METHOXYCHLOR IN BOTTOM MATERIAL (UG/KG)	TOTAL METHYL PARATHION (UG/L)	METHYL PARATHION IN BOTTOM MATERIAL (UG/KG)	TOTAL METHYL TRITHION (UG/L)	METHYL TRITHION IN BOTTOM MATERIAL (UG/KG)	TOTAL PARATHION (UG/L)
DEC 31...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND
JUN 10...	NO	ND	ND	ND	ND	ND	NO	ND	ND	ND	ND	ND
AUG 11...	--	ND	--	NO	--	ND	--	ND	--	ND	--	ND

DATE	PARATHION IN BOTTOM MATERIAL (UG/KG)	TOTAL TOXAPHENE (UG/L)	TOXAPHENE IN BOTTOM MATERIAL (UG/KG)	TOTAL TRITHION (UG/L)	TRITHION IN BOTTOM MATERIAL (UG/KG)	SIMAZINE IN BOTTOM MATERIAL (UG/KG DRY SOLIDS)	TOTAL 2,4-D (UG/L)	2,4-D IN BOTTOM MATERIAL (UG/KG)	TOTAL 2,4,5-T (UG/L)	2,4,5-T IN BOTTOM MATERIAL (UG/KG)	TOTAL SILVEX (UG/L)
DEC 31...	--	ND	--	NO	--	--	ND	--	ND	--	ND
JUN 10...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG 11...	--	ND	--	ND	--	--	ND	--	ND	--	ND

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	624	628	669	625	619	617	530	695	621	674	631	618
2	627	631	650	605	606	638	557	695	631	665	629	618
3	627	637	630	613	613	652	552	680	629	668	629	619
4	623	641	569	661	641	652	569	683	641	660	627	617
5	628	641	638	656	638	660	600	682	630	710	627	617
6	628	641	642	665	653	661	621	692	629	669	627	616
7	624	649	629	762	650	652	627	692	629	672	629	618
8	625	660	636	669	649	634	641	691	631	649	629	616
9	623	660	629	672	642	621	639	682	630	666	621	618
10	625	639	627	731	632	619	635	679	629	687	621	613
11	620	630	639	683	610	620	631	679	639	670	621	618
12	620	630	653	680	598	623	631	679	641	664	629	617
13	623	627	639	665	621	632	634	678	649	651	632	618
14	619	627	665	668	610	646	640	678	700	651	641	618
15	622	629	662	644	614	641	635	678	662	648	638	619
16	622	633	667	650	610	631	631	679	670	652	638	618
17	625	633	690	652	596	623	638	668	668	620	637	618
18	629	633	629	649	595	620	641	671	661	623	638	615
19	632	633	662	647	592	594	644	671	660	656	634	615
20	654	633	681	642	604	578	647	670	662	652	632	613
21	646	631	677	636	617	522	650	653	662	636	631	618
22	649	630	669	636	617	463	649	656	671	638	632	617
23	645	633	758	639	607	467	643	657	681	647	632	610
24	643	668	641	640	601	445	650	656	675	641	629	618
25	644	633	610	645	591	499	659	656	679	636	623	617
26	651	633	631	651	602	481	660	655	681	632	629	615
27	649	631	627	630	602	459	660	652	688	631	623	618
28	646	631	612	642	602	474	664	652	688	632	631	620
29	642	646	639	651	632	485	665	652	693	629	629	619
30	637	658	571	647	---	495	672	655	680	624	627	619
31	634	---	619	640	---	498	---	658	---	624	621	---
MONTH	632	638	644	655	616	577	631	672	657	651	630	617

YEAR MAX 762 MIN 445 MEAN 635

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.0	7.5	0.0	0.0	0.0	0.0	5.5	8.0	15.0	18.0	18.0	18.0
2	11.5	7.5	0.0	0.0	0.0	0.0	5.0	8.0	16.5	18.0	16.5	16.0
3	11.5	8.0	0.0	0.0	0.0	0.0	4.0	8.5	17.0	18.0	17.5	16.5
4	13.0	9.0	0.0	0.0	0.0	0.0	4.0	9.5	17.0	17.5	17.0	15.5
5	12.5	8.5	0.0	0.0	0.0	0.0	6.0	8.5	17.5	19.0	16.0	17.0
6	11.0	8.5	0.0	0.0	0.0	0.0	6.5	8.5	17.0	18.5	16.0	16.0
7	11.5	8.0	0.0	0.0	0.0	0.0	7.0	9.5	17.0	18.5	15.5	17.0
8	10.5	7.0	0.0	0.0	0.0	0.0	9.0	11.5	17.0	19.5	17.0	15.0
9	8.0	6.0	0.0	0.0	0.0	0.0	9.0	11.0	17.5	20.5	19.0	13.0
10	8.0	5.0	0.0	0.0	0.0	0.0	9.5	12.0	17.5	20.5	18.5	13.0
11	7.5	4.5	0.5	0.0	0.0	0.0	8.0	12.5	17.5	21.0	18.0	15.0
12	7.5	3.0	0.0	0.0	0.0	0.0	8.5	12.0	17.5	19.0	18.5	15.5
13	8.5	3.5	0.0	0.0	0.0	0.0	9.5	11.0	16.0	19.5	18.0	16.0
14	8.0	5.5	0.0	0.0	0.0	0.0	9.5	13.0	16.0	18.5	19.0	15.0
15	7.5	5.5	0.0	0.0	0.0	0.0	9.5	11.5	14.0	18.0	19.0	17.0
16	8.5	7.5	0.0	0.0	0.0	0.0	9.5	12.0	16.0	17.5	20.0	15.0
17	8.0	6.5	0.0	0.0	0.0	0.0	7.0	12.0	15.0	18.0	19.0	17.0
18	9.0	6.0	0.0	0.0	0.0	0.0	5.0	12.5	15.0	18.5	20.0	16.5
19	9.5	5.5	0.0	0.0	0.0	0.0	6.0	13.0	16.0	20.0	19.0	15.0
20	10.0	4.0	0.0	0.0	0.0	0.0	5.5	14.0	17.0	19.0	19.0	14.0
21	9.5	3.0	0.0	0.0	0.0	0.0	6.5	14.0	17.0	19.5	18.5	14.0
22	8.5	2.0	0.0	0.0	0.0	0.0	6.5	14.0	16.5	18.5	17.5	14.0
23	8.0	2.0	0.0	0.0	0.0	2.0	7.5	14.0	17.0	19.5	19.0	12.0
24	7.0	0.5	0.0	0.0	0.0	2.5	7.0	13.0	14.5	18.5	18.5	11.0
25	7.0	0.5	0.0	0.0	0.0	4.0	7.0	14.0	15.0	20.5	18.0	13.0
26	7.0	0.5	0.0	0.0	0.0	3.0	7.5	12.5	14.5	18.5	19.0	12.5
27	6.5	0.5	0.0	0.0	0.0	3.0	8.0	13.0	15.0	19.5	15.0	13.0
28	5.5	0.5	0.0	0.0	0.0	3.5	8.0	14.0	14.5	19.0	14.5	11.0
29	6.0	0.0	0.0	0.0	0.0	3.5	8.0	15.0	15.5	18.5	14.0	11.0
30	6.5	0.0	0.0	0.0	---	4.0	8.0	14.0	17.0	18.5	17.0	11.0
31	7.5	---	0.0	0.0	---	4.0	---	15.0	---	17.0	18.0	---
MONTH	9.0	4.5	0.0	0.0	0.0	1.0	7.5	12.0	16.0	19.0	17.5	14.5

YEAR MAX 21.0 MIN 0.0 MEAN 8.5

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	13700	140	5180	14900	182	7320	10000	630	17000
2	14200	127	4870	14900	347	14000	9800	706	18700
3	14100	141	5370	15000	411	16600	9500	676	17300
4	14000	151	5710	15100	420	17100	9700	631	16500
5	14000	142	5370	15200	658	27000	10500	574	16300
6	14000	134	5070	15200	960	39400	11000	490	14600
7	14000	140	5290	15200	736	30200	11000	400	11900
8	14000	150	5670	15400	405	16800	12000	374	12100
9	14000	162	6120	15500	354	14800	13000	380	13300
10	14100	169	6430	15400	405	16800	13500	397	14500
11	13800	182	6780	15300	405	16700	14000	420	15900
12	14000	165	6240	15300	360	14900	14000	424	16000
13	14100	164	6240	15200	370	15200	14000	411	15500
14	14400	164	6380	15100	423	17200	13500	394	14400
15	14700	136	5400	15000	431	17500	12500	367	12400
16	14900	116	4670	15100	396	16100	11000	327	9710
17	14900	119	4790	15100	380	15500	10500	286	8110
18	15000	129	5220	15200	382	15700	10500	268	7600
19	15300	126	5210	15300	392	16200	11500	265	8230
20	15300	152	6280	15100	392	16000	12500	273	9210
21	15100	244	9950	14900	400	16100	12500	273	9210
22	15000	255	10300	14800	415	16600	12500	259	8740
23	15000	153	6200	14800	365	14600	13000	235	8250
24	14900	114	4590	14900	277	11100	14000	210	7940
25	14900	104	4180	14800	238	9510	15000	201	8140
26	15000	102	4130	14800	237	9470	15500	200	8370
27	14700	105	4170	14800	330	13200	16000	202	8730
28	14700	112	4450	14400	478	18600	16000	190	8210
29	14700	127	5040	12400	529	17700	16000	168	7260
30	14800	127	5070	11200	520	15700	16000	168	7260
31	14800	124	4960	---	---	---	15500	164	6860
TOTAL	450100	---	175330	445300	---	503600	396000	---	358230

		JANUARY			FEBRUARY			MARCH	
1	15000	170	6880	17000	87	3990	17500	73	3450
2	14000	219	8280	16500	83	3700	16000	68	2940
3	12500	283	9550	16000	98	4230	15000	73	2960
4	11000	358	10600	14000	103	3890	13000	78	2740
5	10500	441	12500	14000	96	3630	13000	79	2770
6	10500	534	15100	14000	67	2530	13000	76	2670
7	10000	572	15400	15000	56	2270	14000	68	2570
8	9400	505	12800	16000	73	3150	15500	60	2510
9	8200	323	7150	17000	101	4640	17000	53	2430
10	9000	72	1750	18000	132	6420	17500	52	2460
11	9800	39	1030	18500	151	7540	18000	53	2580
12	10500	53	1500	18500	154	7690	18000	63	3060
13	11000	86	2550	18000	152	7390	17000	81	3720
14	12000	141	4570	18000	145	7050	18000	110	5350
15	13000	192	6740	18000	141	6850	19000	147	7540
16	14000	216	8160	18000	147	7140	21000	187	10600
17	15000	198	8020	18000	153	7440	23000	234	14500
18	16000	220	9500	18000	155	7530	24000	302	19600
19	16500	310	13800	18000	148	7190	25000	401	27100
20	16500	282	12600	17500	145	6850	27000	528	38500
21	16000	218	9420	18000	167	8120	29000	665	52100
22	16500	135	6010	18500	203	10100	30000	849	68800
23	17000	95	4360	19000	218	11200	28000	1120	84700
24	17000	105	4820	19000	218	11200	27100	1540	113000
25	17000	129	5920	19000	211	10800	24500	1680	111000
26	17000	155	7110	19000	193	9900	25600	1680	116000
27	17000	90	4130	19000	177	9080	24900	1640	110000
28	18000	60	2920	18500	156	7790	23700	1600	102000
29	18500	99	4950	18000	104	5050	22500	1550	94200
30	18000	104	5050	---	---	---	22600	1490	90900
31	17000	97	4450	---	---	---	22100	1480	88300
TOTAL	433400	---	227620	506000	---	194360	641500	---	1191050

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	21500	1460	84800	15500	475	19900	19200	409	21200
2	21300	1380	79400	15300	485	20000	19100	385	19900
3	20600	1280	71200	15100	479	19500	18800	516	26200
4	19800	1170	62500	14800	446	17800	25800	807	56200
5	20900	1100	62100	14300	417	16100	23000	682	42400
6	21500	1010	58600	12000	397	12900	24900	788	53000
7	21600	1010	58900	11200	363	11000	26200	670	47400
8	21000	920	52200	10700	316	9130	30000	715	57900
9	20100	749	40600	10200	301	8290	25300	703	48000
10	19500	629	33100	10100	315	8590	24700	731	48800
11	19100	550	28400	10200	344	9470	24700	821	54800
12	18400	474	23500	9950	380	10200	28000	1220	92200
13	18000	422	20500	9580	404	10400	30600	1350	112000
14	17500	411	19400	9760	407	10700	32900	1330	118000
15	17500	417	19700	9920	400	10700	30800	1040	86500
16	17300	393	18400	13900	414	15500	28500	800	61600
17	16900	326	14900	13400	446	16100	27200	722	53000
18	16800	311	14100	13500	434	15800	26900	621	45100
19	16200	357	15600	13500	396	14400	27400	560	41400
20	16400	401	17800	14400	441	17100	25000	455	30700
21	16300	415	18300	16900	528	24100	24000	765	49600
22	16300	417	18400	19400	544	28500	20400	650	35800
23	16200	411	18000	19700	522	27800	17500	578	27300
24	16700	405	18300	19600	532	28200	18400	648	32200
25	16600	403	18100	19400	567	29700	17600	755	35900
26	16100	421	18300	19400	574	30100	17800	618	29700
27	15800	586	25000	19400	524	27400	18400	621	30900
28	15900	785	33700	19300	400	20800	18200	858	42200
29	15500	546	22900	19100	473	24400	17600	1150	54600
30	15100	471	19200	19100	461	23800	17500	935	44200
31	---	---	---	19300	438	22800	---	---	---
TOTAL	542400	---	1005900	457910	---	561180	706400	---	1498700
		JULY			AUGUST			SEPTEMBER	
1	17500	510	24100	14600	354	14000	14900	311	12500
2	17100	405	18700	14300	347	13400	14900	319	12800
3	17100	503	23200	14400	357	13900	14900	297	11900
4	16000	838	36200	14000	406	15300	14800	274	10900
5	18600	1290	64800	14200	400	15300	14800	300	12000
6	19000	1530	78500	14500	361	14100	14800	387	15500
7	20600	1630	90700	14500	441	17300	14800	478	19100
8	20700	1390	77700	14100	596	22700	14700	420	16700
9	21100	990	56400	14100	591	22500	14900	308	12400
10	19200	841	43600	13600	478	17600	15000	312	12600
11	17400	811	38100	15300	400	16500	14800	367	14700
12	17200	821	38100	15300	518	21400	14800	355	14200
13	17300	858	40100	15200	493	20200	14900	308	12400
14	17000	910	41800	15100	398	16200	15000	297	12000
15	17400	985	46300	14800	370	14800	14900	308	12400
16	17700	1060	50700	15200	409	16800	14900	295	11900
17	17300	1110	51800	15300	407	16800	14300	265	10200
18	17500	885	41800	15300	373	15400	14200	299	11500
19	17400	559	26300	15300	362	15000	14300	355	13700
20	16900	458	20900	15100	368	15000	14800	339	13500
21	16300	461	20300	14000	357	13500	14900	276	11100
22	16300	399	17600	13500	334	12200	14700	276	11000
23	16000	294	12700	13300	346	12400	14700	300	11900
24	16700	268	12100	14500	375	14700	14800	235	9390
25	15600	315	13300	14700	364	14400	14800	119	4760
26	15800	380	16200	14600	331	13000	14600	92	3630
27	15600	448	18900	14700	362	14400	14800	110	4400
28	16200	458	20000	14700	416	16500	14700	120	4760
29	14900	374	15000	14600	370	14600	14900	111	4470
30	14800	340	13600	14600	274	10800	14600	101	3980
31	14700	349	13900	14600	269	10600	---	---	---
TOTAL	532900	---	1083400	452000	---	481300	442900	---	332290
YEAR	6006810		7612960						

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM
OCT											
21...	1500	10.0	15500	396	16600	34	--	--	--	--	--
NOV											
26...	1130	.5	14000	73	2760	81	--	--	--	--	--
DEC											
31...	1200	.0	15000	162	6560	24	--	--	--	--	--
JAN											
27...	1500	.5	16900	77	3510	46	--	--	--	--	--
FEB											
26...	1300	.5	18900	210	10700	70	--	--	--	--	--
MAR											
30...	1330	3.0	22600	1480	90300	43	--	--	--	--	--
APR											
28...	1200	7.0	16000	824	35600	23	--	--	--	--	--
MAY											
28...	1000	13.5	19300	364	19000	51	--	--	--	--	--
JUN											
10...	1330	20.0	24500	706	46700	60	--	--	--	--	--
JUL											
13...	1400	20.0	16900	461	21000	54	--	--	--	--	--
AUG											
11...	1400	18.5	15100	381	15500	--	25	38	59	82	100
SEP											
14...	1300	15.0	15100	291	11900	49	--	--	--	--	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM
APR							
29...	1200	--	3	27	93	97	100
MAY							
28...	1000	13.5	19	69	98	100	--

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
OCT. 21, 1975
1500 HOURS
490 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...CHARACIACEAE				
	....SCHROEOERIA		17	3	
	...OOCYSTACEAE				
	....ANKISTRODESMUS		41	8	
	...SCENEDESMACEAE				
L	....ACTINASTRUM			0	
		TOTALS	58	11	0.863=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		8	2	
	....MELOSIRA		33	7	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		8	2	
	...DIATOMACEAE				
	....DIATOMA		8	2	
	...FRAGILARIACEAE				
	....ASTERIONELLA		41	8	
D	....FRAGILARIA		100	20	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		17	3	
	...NITZSCHIACEAE				
D	....NITZSCHIA		130	27	
		TOTALS	350	71	2.330=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
D	....OSCILLATORIA		83	17	
		TOTALS	83	17	0.000=DIVERSITY

NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:

PHYL/DIV	1.148
CLASS	1.148
ORDER	1.523
FAMILY	2.596
GENERA	2.909

NOV. 26, 1975
1130 HOURS
2,100 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		1,700	77	
	....MELOSIRA		97	5	
	..PENNALES	PENNATE			
	...DIATOMACEAE				
	....DIATOMA		190	9	
	...NITZSCHIACEAE				
	....NITZSCHIA		190	9	
		TOTALS	2,100	100	1.119=DIVERSITY

ORDER	0.684
FAMILY	0.866
GENERA	1.119

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
DEC. 31, 1975
1200 HOURS
80 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...CYMBELLACEAE				
	....CYMBELLA		8	10	
	...DIATOMACEAE				
D	....DIATOMA		24	30	
	...FRAGILARIACEAE				
D	....ASTERIONELLA		40	50	
	...NITZSCHIACEAE				
	....NITZSCHIA		8	10	
		TOTALS	80	100	1.685=DIVERSITY
	FAMILY 1.685				
	GENERA 1.685				

JAN. 27, 1976
1500 HOURS
180 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
O	....CYCLOTELLA		53	30	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
L	....COCCONEIS			0	
	...FRAGILARIACEAE				
O	....ASTERIONELLA		110	60	
	...NAVICULACEAE	NAVICULOID			
L	....NAVICULA			0	
	...NITZSCHIACEAE				
	....NITZSCHIA		18	10	
	...SURIRELLACEAE				
L	....SURIRELLA			0	
		TOTALS	180	100	1.295=DIVERSITY
	ORDER 0.881				
	FAMILY 1.295				
	GENERA 1.295				

FEB. 26, 1976
1300 HOURS
1,300 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		33	3	
		TOTALS	33	3	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		33	3	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....RHOICOSPHENIA		67	5	
	...DIATOMACEAE				
	....DIATOMA		130	10	
	...FRAGILARIACEAE				
D	....ASTERIONELLA		700	54	
	...NAVICULACEAE	NAVICULOID			
L	....NAVICULA			0	
	...NITZSCHIACEAE				
	....NITZSCHIA		130	10	
		TOTALS	1,100	82	1.555=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
O	....OSCILLATORIA		200	15	
		TOTALS	200	15	0.000=DIVERSITY
	PHYL/DIV 0.785				
	CLASS 0.785				
	ORDER 0.950				
	FAMILY 2.061				
	GENERA 2.061				

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAR. 26, 1976
1400 HOURS
600 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
L	....MELOSIRA			0	
	....STEPHANODISCUS		75	12	
	..PENNALES	PENNATE			
	...NAVICULACEAE	NAVICULOID			
L	....GYROSIGMA			0	
D	....NAVICULA		230	37	
	...NITZSCHIACEAE				
D	....NITZSCHIA		300	50	
		TOTALS	600	99	1.406=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
L	....LYNGBYA			0	
L	....OSCILLATORIA			0	
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
L	....EUGLENA			0	

ORDER 0.544
FAMILY 1.406
GENERA 1.406

APR. 28, 1976
1200 HOURS
200 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
D	....ANKISTRODESMUS		43	21	
		TOTALS	43	21	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		57	29	
L	....MELOSIRA			0	
	..PENNALES	PENNATE			
	...DIATOMACEAE				
	....DIATOMA		28	14	
	...FRAGILARIACEAE				
	....ASTERIONELLA		14	7	
	...NAVICULACEAE	NAVICULOID			
	....GYROSIGMA		14	7	
	....NAVICULA		14	7	
	...NITZSCHIACEAE				
	....NITZSCHIA		28	14	
		TOTALS	160	78	2.369=DIVERSITY

PHYL/DIV 0.750
CLASS 0.750
ORDER 1.493
FAMILY 2.468
GENERA 2.611

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

MAY 28, 1976
1000 HOURS
660 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		50	8	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		17	3	
	...CYMBELLACEAE				
	....CYMBELLA		17	3	
	...DIATOMACEAE				
D	....DIATOMA		200	31	
	...FRAGILARIACEAE				
	....ASTERIONELLA		17	3	
D	....FRAGILARIA		250	38	
	....SYNEDRA		34	5	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		34	5	
	...NITZSCHIACEAE				
	....NITZSCHIA		34	5	
		TOTALS	660	101	2.404=DIVERSITY

ORDER 0.391
FAMILY 2.033
GENERA 2.404

JUNE 10, 1976
1330 HOURS
1,200 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		57	5	
	...SCENEDESMACEAE				
L	....CRUCIGENIA			0	
	....SCENEDESMUS		85	7	
		TOTALS	140	12	0.971=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		57	5	
L	....MELOSIRA			0	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....RHOICOSPHENIA		85	7	
	...CYMBELLACEAE				
	....AMPHORA		28	2	
	...DIATOMACEAE				
L	....DIATOMA			0	
	...FRAGILARIACEAE				
L	....ASTERIONELLA			0	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		28	2	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		85	7	
	...NITZSCHIACEAE				
	....NITZSCHIA		85	7	
		TOTALS	370	30	2.449=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
	..CHRYSOMONADALES				
	...OCHROMONADACEAE				
	....DINOBRYON		28	2	
		TOTALS	28	2	0.000=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...NOSTOCACEAE				
D	....ANABAENA		710	57	
		TOTALS	710	57	0.000=DIVERSITY

PHYL/DIV 1.346
CLASS 1.464
ORDER 1.647
FAMILY 2.298
GENERA 2.298

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
JULY 13, 1976
1400 HOURS
2,400 CELLS/ML

ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
CHLOROPHYTA	GREEN ALGAE			
.CHLOROPHYCEAE				
..CHLOROCOCCALES				
...HYDRODICTYACEAE				
....PEDIASTRUM		160	7	
...OOCYSTACEAE				
....ANKISTRODESMUS		40	2	
...SCENEDESMACEAE				
....ACTINASTRUM		320	13	
	TOTALS	520	22	1.239=DIVERSITY
CHRYSOPHYTA				
.BACILLARIOPHYCEAE	DIATOMS			
..CENTRALES	CENTRIC			
...COSCINODISCACEAE				
....CYCLOTELLA		80	3	
....MELOSIRA		280	12	
..PENNALES	PENNATE			
...ACHNANTHACEAE				
....RHOICOSPHENIA		20	1	
...FRAGILARIACEAE				
....FRAGILARIA		200	8	
...GOMPHONEMATACEAE				
....GOMPHONEMA		20	1	
...NAVICULACEAE	NAVICULOID			
....NAVICULA		100	4	
...NITZSCHIACEAE				
....NITZSCHIA		180	8	
	TOTALS	880	37	2.399=DIVERSITY
CYANOPHYTA	BLUE-GREEN ALGAE			
.MYXOPHYCEAE				
..OSCILLATORIALES	FILAMENTOUS			
...OSCILLATORIACEAE				
O ....OSCILLATORIA		980	41	
	TOTALS	980	41	0.000=DIVERSITY

PHYL/DIV 1.537
CLASS 1.537
ORDER 1.898
FAMILY 2.579
GENERA 2.695

AUG. 11, 1976
1400 HOURS
380 CELLS/ML

ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
CHLOROPHYTA	GREEN ALGAE			
.CHLOROPHYCEAE				
..CHLOROCOCCALES				
...CHARACIACEAE				
....SCHROEDERIA		29	8	
..VOLVOCALES				
...CHLAMYDOMONADACEAE				
....CHLAMYDOMONAS		29	8	
	TOTALS	58	16	1.000=DIVERSITY
CHRYSOPHYTA				
.BACILLARIOPHYCEAE	DIATOMS			
..PENNALES	PENNATE			
...CYMBELLACEAE				
....CYMBELLA		15	4	
...FRAGILARIACEAE				
....SYNEDRA		29	8	
...GOMPHONEMATACEAE				
....GOMPHONEMA		15	4	
...NAVICULACEAE	NAVICULOID			
....GYROSIGMA		15	4	
....NAVICULA		29	8	
...NITZSCHIACEAE				
O ....NITZSCHIA		170	46	
	TOTALS	280	74	1.773=DIVERSITY
EUGLENOPHYTA	EUGLENOIDS			
.EUGLENOPHYCEAE				
..EUGLENALES				
...EUGLENACEAE				
....EUGLENA		15	4	
....TRACHELOMONAS		29	8	
	TOTALS	44	12	0.918=DIVERSITY

PHYL/DIV 1.106
CLASS 1.106
ORDER 1.259
FAMILY 2.449
GENERA 2.661

06186000 YELLOWSTONE LAKE AT BRIDGE BAY, YELLOWSTONE NATIONAL PARK

LOCATION.--Lat 44°32'00", long 110°26'20", Yellowstone National Park, Hydrologic Unit 10070001, at marina at Bridge Bay, 3.7 mi (6.0 km) southwest of lake outlet.

DRAINAGE AREA.--1,006 mi^2 (2,606 km^2).

PERIOD OF RECORD.--October 1921 to current year (gage heights only). Prior to October 1966, published as Yellowstone Lake at Lake Hotel.

REVISED RECORDS.--WSP 1916: Drainage area.

GAGE.--Nonrecording gage usually read once daily except during winter months, when it is read occasionally. Datum of gage is 7,729.45 ft (2,355.936 m) above mean sea level. Prior to Oct. 1, 1966, nonrecording gages at Lake Hotel dock at same datum.

REMARKS.--No regulation.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 7.34 ft (2.237 m) June 28, 30, 1974; minimum observed, -0.1 ft (-0.03 m) Dec. 7, 8, 1931.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 5.68 ft (1.731 m) July 7; minimum observed, 1.18 ft (0.360 m) Feb. 25.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---				---	---	---	---	---	5.48	---	3.15
2	---				---	---	1.26	---	---	5.48	4.64	3.09
3	---				---	1.42	---	---	---	5.54	4.66	3.11
4	---				---	---	---	---	---	---	---	3.07
5	---				---	---	---	---	---	5.61	4.52	3.01
6	---				---	---	---	---	---	5.59	4.48	---
7	---				---	---	---	---	5.08	5.67	4.33	2.94
8	---				---	---	---	1.42	5.04	5.64	4.28	2.91
9	---				---	---	1.27	---	5.14	5.60	4.25	2.89
10	---				---	1.26	---	---	5.28	5.63	4.17	2.84
11	---				1.34	---	---	---	---	---	4.08	2.82
12	---				---	---	---	---	5.28	5.62	4.03	---
13	---				---	---	---	---	---	5.59	3.97	---
14	---				---	---	---	1.78	5.57	5.55	3.96	---
15	---				---	---	---	---	---	5.54	3.96	---
16	---				---	---	---	---	5.44	5.46	3.86	---
17	---				---	---	---	---	5.48	5.38	3.79	2.72
18	---				1.34	---	---	---	---	5.38	3.77	---
19	---				---	---	---	---	---	5.38	3.68	---
20	---				---	---	---	---	---	5.32	3.67	---
21	---				---	---	---	---	5.52	5.25	3.60	---
22	---				---	---	---	---	5.54	5.20	---	---
23	---				---	---	---	---	5.53	5.16	3.66	---
24	---				---	---	---	---	5.56	5.08	3.48	---
25	---				1.18	---	---	---	5.56	---	3.47	---
26	---				---	1.24	---	---	5.48	4.96	3.44	---
27	---				---	---	---	---	5.48	4.87	3.38	---
28	---				---	---	---	---	---	4.86	3.32	---
29	---				---	---	---	---	---	4.82	---	2.42
30	2.00				---	---	---	---	5.45	4.78	3.22	2.44
31	---				---	1.26	---	---	---	4.87	3.20	---
MEAN	---				---	---	---	---	---	---	---	---
MAX	---				---	---	---	---	---	---	---	---
MIN	---				---	---	---	---	---	---	---	---

06186500 YELLOWSTONE RIVER AT YELLOWSTONE LAKE OUTLET, YELLOWSTONE NATIONAL PARK

LOCATION.--Lat 44°34'03", long 110°22'48", Yellowstone National Park, Hydrologic Unit 10070001, on left bank 450 ft (137 m) downstream from Fishing Bridge, 0.2 mi (0.3 km) downstream from outlet of Yellowstone Lake, and at mile 594.8 (957.0 km).

DRAINAGE AREA.--1,006 mi² (2,606 km²).

PERIOD OF RECORD.--December 1922 to current year (prior to October 1926, gage heights only). Monthly discharge only for winter periods in water years 1927-30, 1932-33, 1935-38, 1940, 1942-46, published in WSP 1309; figures of daily discharge for these months published in WSP 646, 666, 686, 701, 731, 746, 786, 806, 826, 856, 896, 956, 976, 1006, 1036, and 1056, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1309: See PERIOD OF RECORD. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 7,727.77 ft (2,355.424 m) above mean sea level. Prior to Oct. 2, 1928, nonrecording gage at site 450 ft (137 m) upstream at datum 1.07 ft (0.326 m) higher.

REMARKS.--Records good except those for winter period, which are fair. No artificial regulation.

AVERAGE DISCHARGE.--50 years (1927-76), 1,339 ft³/s (37.92 m³/s), 18.08 in/yr (459 mm/yr), 970,100 acre-ft/yr (1.19 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,170 ft³/s (260 m³/s) June 28, 1974, gage height, 8.20 ft (2.499 m); minimum daily, 130 ft³/s (3.68 m³/s) Mar. 1-31, 1935, but may have been less during periods of ice effect; minimum gage height, 1.45 ft (0.442 m) Dec. 17, 1936.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,460 ft³/s (155 m³/s) July 9, gage height, 6.62 ft (2.018 m); minimum daily, 560 ft³/s (15.9 m³/s) Feb. 5, Mar. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1230	914	680	630	600	590	605	640	3170	5120	3770	1800
2	1220	900	690	630	590	570	615	640	3320	5220	3710	1770
3	1190	888	680	630	580	560	610	640	3500	5280	3640	1720
4	1190	876	660	630	570	590	605	650	3710	5300	3560	1680
5	1160	870	660	600	560	600	600	660	3900	5320	3460	1630
6	1130	864	660	610	570	600	595	665	4120	5380	3340	1620
7	1130	864	660	620	590	600	595	670	4320	5360	3230	1600
8	1110	858	660	630	590	600	585	681	4540	5380	3140	1560
9	1080	852	650	630	590	600	590	697	4680	5380	3050	1530
10	1070	852	650	630	590	600	595	725	4870	5380	2950	1510
11	1050	834	640	640	600	610	585	769	5060	5380	2870	1490
12	1040	816	640	640	590	635	585	804	5220	5380	2800	1490
13	1040	798	640	640	580	630	585	828	5320	5340	2720	1450
14	1040	792	630	630	580	630	585	888	5300	5300	2640	1420
15	1030	792	610	620	580	630	590	949	5260	5200	2590	1420
16	1020	798	580	630	580	625	585	1020	5280	5100	2550	1390
17	998	786	600	630	580	620	590	1100	5240	5040	2490	1380
18	984	775	640	630	580	620	590	1190	5260	5020	2410	1380
19	984	769	640	630	580	625	590	1330	5200	4980	2370	1340
20	970	758	640	630	590	625	595	1460	5160	4850	2290	1330
21	970	730	640	630	590	620	605	1580	5180	4760	2240	1310
22	977	700	630	630	590	620	610	1690	5280	4660	2170	1300
23	970	700	620	620	590	620	620	1840	5320	4550	2160	1300
24	963	700	620	620	600	620	620	2020	5340	4460	2120	1270
25	963	690	620	600	590	635	620	2180	5320	4370	2080	1260
26	970	690	630	610	590	635	630	2290	5200	4270	2030	1230
27	984	680	630	610	590	630	645	2390	5140	4180	1970	1220
28	977	680	630	610	590	630	645	2540	5080	4180	1920	1200
29	963	680	630	610	590	620	645	2680	5020	4030	1890	1180
30	942	670	630	610	---	615	645	2870	5060	3920	1850	1160
31	914	---	630	600	---	610	---	3010	---	3820	1830	---
TOTAL	32259	23576	19820	19310	16990	19015	18160	42096	144390	151810	81840	42940
MEAN	1041	786	639	623	586	613	605	1358	4813	4897	2640	1431
MAX	1230	914	690	640	600	635	645	3010	5340	5380	3770	1800
MIN	914	670	580	600	560	560	585	640	3170	3820	1830	1160
CFSM	1.03	.78	.64	.62	.58	.61	.60	1.35	4.78	4.87	2.62	1.42
IN.	1.19	.87	.73	.71	.63	.70	.67	1.56	5.34	5.61	3.03	1.59
AC-FT	63990	46760	39310	38300	33700	37720	36020	83500	286400	301100	162300	85170

CAL YR 1975 TOTAL 540609 MEAN 1481 MAX 6360 MIN 370 CFSM 1.47 IN 19.99 AC-FT 1072000
WTR YR 1976 TOTAL 612206 MEAN 1673 MAX 5380 MIN 560 CFSM 1.66 IN 22.64 AC-FT 1214000

06191500 YELLOWSTONE RIVER AT CORWIN SPRINGS, MT

LOCATION.--Lat 45°06'43", long 110°47'37", in SE¼NW¼ sec.30, T.8 S., R.8 E., Park County, Hydrologic Unit 10070002, on left bank 20 ft (6 m) downstream from highway bridge at Corwin Springs, 1.3 mi (2.1 km) upstream from Mol Herron Creek, 7 mi (11 km) northwest of Gardiner, and at mile 530.5 (853.6 km).

DRAINAGE AREA.--2,623 mi^2 (6,794 km^2).

PERIOD OF RECORD.--August 1889 to November 1893 (published as "at Horr"), September 1910 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1912. WSP 1509: 1889-94, 1911, 1913, 1916-18, 1920-21, 1925, 1927. WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,079.09 ft (1,548.107 m) above mean sea level. Aug. 12, 1889, to Nov. 4, 1893, nonrecording gages at site 2 mi (3 km) upstream at different datums. Sept. 2, 1910, to Apr. 19, 1935, nonrecording gages on bridge at present datum.

REMARKS.--Records good. Natural storage in Yellowstone Lake. Diversions for irrigation of about 960 acres (3.89 km^2) of which 40 acres (162,000 m^2) lies below station.

AVERAGE DISCHARGE.--70 years, 3,135 ft^3/s (88.78 m^3/s), 16.23 in/yr (412 mm/yr), 2,271,000 acre-ft/yr (2.80 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 32,000 ft^3/s (906 m^3/s) June 14, 15, 1918, gage height, 11.5 ft (3.51 m), from rating curve extended above 18,000 ft^3/s (510 m^3/s); minimum observed, 389 ft^3/s (11.0 m^3/s) Feb. 23, Mar. 5, 9, 1937, gage height, 0.05 ft (0.015 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 12,000 ft^3/s (340 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
June 5	0400	*19,200	544	*8.33	2.539	June 21	0500	16,000	453	7.48	2.280

Minimum daily discharge, 610 ft^3/s (17.3 m^3/s) Dec. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1850	1630	1050	950	1040	1090	1090	1590	13300	13500	5590	2610
2	1820	1650	1090	880	1020	950	1080	1900	14400	13200	5670	2540
3	1800	1660	1400	900	1040	800	1030	2220	16400	12100	5280	2510
4	1770	1630	1410	1000	740	880	1070	2730	17300	11700	5260	2450
5	1800	1590	1420	1070	660	930	1100	2680	17900	11500	5020	2390
6	1750	1580	1370	1110	800	1000	1140	2580	17900	11400	4770	2330
7	1720	1640	1360	1110	930	1060	1210	2980	17300	11000	4590	2550
8	1800	1570	1350	1120	1040	1060	1330	3890	17700	10800	4410	2430
9	1770	1480	1330	1130	1050	1060	1480	5040	17800	10400	4280	2300
10	1750	1480	1320	1140	1030	1070	1480	6160	17700	10100	4210	2260
11	1750	1490	1320	1110	1020	1070	1520	6880	16900	9740	4090	2230
12	1760	1390	1340	1120	1040	930	1650	5840	15600	9370	3970	2390
13	1780	1440	1100	1140	1040	930	1810	5740	16400	9140	3870	2410
14	1790	1440	980	1120	1040	1040	1750	8260	14000	8590	3790	2250
15	1730	1470	800	1130	1030	1010	1710	9810	12300	8230	3680	2190
16	1730	1520	610	1140	1040	1020	1620	8050	13000	7930	3720	2150
17	1700	1520	700	1160	1030	1060	1500	8820	12900	7660	3590	2110
18	1720	1450	800	1180	1020	1100	1470	12000	12600	8350	3500	2130
19	1720	1350	1000	1130	1010	1140	1490	13900	12200	7990	3570	2590
20	1680	1250	1130	1060	1010	1010	1400	12900	13400	7630	3400	2370
21	1700	1240	1120	1070	968	1010	1400	13400	15100	7240	3290	2150
22	2000	1320	1140	1070	983	1060	1420	13600	15000	7070	3170	2080
23	1870	1430	1140	1100	998	1080	1450	13200	14000	6800	3190	2250
24	1670	1390	1180	1110	1020	1060	1400	12300	12400	6570	3220	2190
25	1650	1290	1180	1100	1020	1050	1500	12500	11800	6390	3090	2110
26	1730	1220	1180	1060	1050	1040	1510	12300	11000	6100	3010	2050
27	1730	1190	1170	1070	1040	1060	1450	12500	10600	6040	2940	2010
28	1720	1120	1120	1070	1060	1010	1440	14800	10800	5790	2860	1980
29	1680	1100	1120	1080	1070	998	1440	16000	11400	5620	2790	1960
30	1670	1070	1150	1090	---	1020	1460	15300	12000	5520	2710	1920
31	1690	---	1120	1060	---	1070	---	14700	---	5550	2670	---
TOTAL	54300	42600	35500	33580	28839	31668	42400	273570	431100	269080	119200	67890
MEAN	1752	1420	1145	1083	994	1022	1413	8825	14370	8680	3845	2263
MAX	2000	1660	1420	1180	1070	1140	1810	16000	17900	13500	5670	2610
MIN	1650	1070	610	880	660	800	1030	1590	10600	5520	2670	1920
CFSM	.67	.54	.44	.41	.38	.39	.54	3.36	5.48	3.31	1.47	.86
IN.	.77	.60	.50	.48	.41	.45	.60	3.88	6.11	3.82	1.69	.98
AC-FT	107700	84500	70410	66610	57200	62810	84100	542600	855100	533700	236400	134700

CAL YR 1975 TOTAL 1257115 MEAN 3444 MAX 19200 MIN 610 CFSM 1.31 IN 17.83 AC-FT 2493000
WTR YR 1976 TOTAL 1429727 MEAN 3906 MAX 17900 MIN 610 CFSM 1.49 IN 20.28 AC-FT 2836000

06191800 BIG CREEK NEAR EMIGRANT, MT

LOCATION.--Lat 45°18'23", long 110°52'37", in NE¼NE¼NE¼ sec.20, T.6 S., R.7 E., Park County, Hydrologic Unit 10070002, on left bank 1.0 mi (1.6 km) downstream from Hyalite Creek, 2.7 mi (4.3 km) upstream from mouth, and 8.5 mi (13.7 km) southwest of Emigrant.

DRAINAGE AREA.--60.9 mi^2 (158 km^2).

PERIOD OF RECORD.--September 1973 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,270 ft (1,606 m), from topographic map.

REMARKS.--Records fair except those for winter period, which are poor. Diversions for irrigation of about 150 acres (607,000 m^2) above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 818 ft^3/s (23.2 m^3/s) June 17, 1974, gage height, 5.51 ft (1.679 m); minimum daily, 16 ft^3/s (0.45 m^3/s) Mar. 3, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 400 ft^3/s (11.3 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
June 9	2045	*433	12.3	*4.82	1.469	June 22	1500	405	11.5	4.75	1.448

Minimum daily discharge, 16.0 ft^3/s (0.45 m^3/s) Mar. 3.

REVISIONS.--Revised daily discharges, in ft^3/s, and monthly and yearly totals for November 1974 and February 1975 are given below. These figures supersede those published in WDR MT-75-1.

Nov. 29 . . . . . 30 Nov. 30 . . . . . 27 Feb. 7 . . . . . 23 Feb. 8 24

Month	Total	Mean	Max	Min	Cfsm	In	Ac-Ft
November 1974	1024	34.1	38	27	.56	.63	2030
February 1975	649	23.2	26	21	.38	.40	1290
Cal Yr 1974	27349	74.9	683	18	1.23	16.71	54250
Wtr Yr 1975	29122	79.8	588	18	1.31	17.79	57760

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	37	33	31	20	19	27	47	274	277	78	38
2	30	38	35	30	20	17	27	62	284	255	74	37
3	30	38	33	30	19	16	27	78	328	225	70	37
4	30	37	32	29	18	17	32	113	354	225	70	37
5	30	38	31	28	17	17	41	114	354	222	67	36
6	29	38	30	25	17	18	52	113	343	219	63	39
7	30	38	30	23	17	19	57	123	358	219	60	45
8	33	35	31	20	18	20	75	151	350	208	59	39
9	32	30	30	20	20	21	77	181	362	197	59	38
10	32	36	30	23	21	21	70	191	373	186	57	37
11	32	34	30	25	22	22	80	236	350	171	56	37
12	33	33	31	25	23	21	95	208	304	176	56	39
13	33	34	31	26	24	21	103	191	277	158	55	37
14	32	34	30	28	25	21	94	236	231	131	52	36
15	33	34	28	32	25	22	82	236	208	129	51	36
16	32	35	30	35	26	25	69	205	234	121	50	35
17	32	34	31	35	26	27	60	210	249	115	48	36
18	33	34	31	33	25	30	53	249	246	125	48	40
19	33	29	30	31	24	32	50	258	252	119	47	43
20	33	28	30	30	23	32	46	264	304	115	46	38
21	53	29	30	28	22	30	45	274	332	117	45	36
22	69	30	30	26	22	28	45	274	369	103	43	36
23	55	33	30	25	22	25	43	274	329	95	46	39
24	47	35	30	25	22	23	43	258	280	90	46	37
25	56	34	30	24	22	23	50	264	246	92	43	36
26	50	39	30	23	22	22	48	255	225	87	42	36
27	41	35	29	23	22	23	46	258	208	78	42	35
28	40	35	30	21	22	24	43	290	208	78	41	34
29	38	32	31	21	22	25	41	304	219	77	40	34
30	36	30	33	21	---	26	41	294	252	78	39	34
31	37	---	31	21	---	26	---	287	---	77	39	---
TOTAL	1154	1026	951	817	628	713	1662	6498	8703	4565	1632	1117
MEAN	37.2	34.2	30.7	26.4	21.7	23.0	55.4	210	290	147	52.6	37.2
MAX	69	39	35	35	26	32	103	304	373	277	78	45
MIN	29	28	28	20	17	16	27	47	208	77	39	34
CFSM	.61	.56	.50	.43	.36	.38	.91	3.45	4.76	2.41	.86	.61
IN.	.70	.63	.58	.50	.38	.44	1.02	3.97	5.32	2.79	1.00	.68
AC-FT	2290	2040	1890	1620	1250	1410	3300	12890	17260	9050	3240	2220

CAL YR 1975 TOTAL 29330 MEAN 80.4 MAX 588 MIN 20 CFSM 1.32 IN 17.92 AC-FT 58180
WTR YR 1976 TOTAL 29466 MEAN 80.5 MAX 373 MIN 16 CFSM 1.32 IN 18.00 AC-FT 58450

06192500 YELLOWSTONE RIVER NEAR LIVINGSTON, MT

LOCATION.--Lat 45°35'50", long 110°33'55", in NE¼NW¼NW¼ sec. 12, T.3 S., R.9 E., Park County, Hydrologic Unit 10070002, on right bank 50 ft (15 m) downstream from bridge on former U.S. Highway 89, 2 mi (3 km) downstream from Suce Creek, 4 mi (6 km) south of Livingston, and at mile 481.3 (774.4 km).

DRAINAGE AREA.--3,551 mi^2 (9,197 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1897 to December 1905, August 1928 to September 1932, October 1937 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1899. WSP 1509: 1902. WSP 1629: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,542.49 ft (1,384.551 m) above mean sea level. May 2, 1897, to Dec. 31, 1905, nonrecording gage on highway bridge at different datum. Aug. 23, 1928, to Sept. 30, 1932, and Mar. 14, 1938, to Feb. 3, 1951, nonrecording gage on highway bridge at present datum.

REMARKS.--Water-discharge records good except those for winter period, which are poor. Diversions for irrigation of 24,200 acres (97.9 km^2) of which 2,000 acres (8.10 km^2) is below station.

AVERAGE DISCHARGE.--51 years, 3,787 ft^3/s (107.2 m^3/s), 2,744,000 acre-ft/yr (3.38 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 36,300 ft^3/s (1,030 m^3/s) June 17, 1974, gage height, 9.21 ft (2.807 m); maximum gage height, 9.34 ft (2.847 m) June 20, 1943; minimum daily discharge, 590 ft^3/s (16.7 m^3/s) Jan. 22, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 21,400 ft^3/s (606 m^3/s) June 10, gage height, 7.51 ft (2.289 m); minimum, 994 ft^3/s (28.2 m^3/s) Feb. 4, gage height, 0.93 ft (0.283 m), result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2440	2280	1800	1300	1610	1300	1530	1990	15700	15000	6390	3390
2	2500	2230	1860	1200	1590	1200	1570	2270	16000	15500	6590	3320
3	2460	2240	1880	1200	1600	1100	1510	2730	17800	14200	6240	3280
4	2420	2260	2080	1300	1400	1200	1480	3400	19200	13500	6100	3210
5	2420	2210	2050	1300	1000	1300	1550	3890	20000	13200	5930	3150
6	2390	2190	2050	1200	1100	1400	1630	3620	20100	13100	5710	3130
7	2370	2210	2000	1300	1200	1400	1700	3840	19500	12700	5490	3210
8	2440	2230	2000	1400	1300	1500	1860	4650	19700	12600	5310	3280
9	2440	2080	1960	1500	1400	1530	2060	5930	19900	12200	5200	3090
10	2390	2050	1960	1600	1500	1530	2130	6450	20200	12100	5150	3000
11	2370	2120	2000	1700	1620	1560	2170	7750	19300	11400	5020	2960
12	2390	2030	1960	1750	1630	1510	2290	8000	17900	11000	4940	3020
13	2420	1980	1960	1750	1680	1350	2560	7110	17800	10700	4780	3190
14	2440	2030	1810	1750	1690	1470	2620	9070	16200	9970	4680	3050
15	2390	2070	1830	1780	1590	1500	2480	11500	13700	9380	4560	2940
16	2350	2140	1600	1830	1560	1450	2410	10100	13500	9040	4510	2880
17	2320	2240	1000	1820	1570	1510	2200	10000	14300	8700	4490	2840
18	2320	2140	1200	1820	1560	1560	2100	12900	13700	9220	4370	2860
19	2330	2020	1300	1780	1530	1650	2100	15800	13500	9220	4390	3070
20	2300	1850	1500	1650	1540	1580	2010	15600	14500	8700	4290	3300
21	2320	1850	1600	1600	1480	1450	1950	16000	17100	8310	4150	2980
22	2640	1980	1720	1640	1480	1490	1960	16100	17800	8030	4040	2840
23	2760	2030	1780	1670	1500	1560	2040	16200	16900	7760	3970	2920
24	2420	2100	1830	1690	1490	1550	1970	14900	14900	7530	4040	3150
25	2260	2030	1810	1600	1500	1550	1960	14800	13700	7300	3940	2980
26	2320	1900	1810	1500	1510	1500	2120	14100	12900	7110	3810	2860
27	2350	1800	1800	1500	1560	1490	2020	14100	12200	6920	3760	2640
28	2330	1700	1780	1600	1550	1500	1970	16200	12100	6710	3670	2560
29	2300	1600	1720	1660	1400	1450	1920	18100	12600	6530	3580	2520
30	2280	1500	1720	1670	---	1450	1900	18100	13300	6420	3520	2480
31	2300	---	1500	1660	---	1470	---	17400	---	6390	3450	---
TOTAL	74180	61090	54870	48720	43140	45060	59770	322600	486000	310520	146070	90100
MEAN	2393	2036	1770	1572	1488	1454	1992	10410	16200	10020	4712	3003
MAX	2760	2280	2080	1830	1690	1650	2620	18100	20200	15500	6590	3390
MIN	2260	1500	1000	1200	1000	1100	1480	1990	12100	6390	3450	2480
AC-FT	147100	121200	108800	96640	85570	89380	118600	639900	964000	615900	289700	178700

CAL YR 1975 TOTAL 1574640 MEAN 4314 MAX 24300 MIN 850 AC-FT 3123000
WTR YR 1976 TOTAL 1742120 MEAN 4760 MAX 20200 MIN 1000 AC-FT 3455000

06192500 YELLOWSTONE RIVER NEAR LIVINGSTON, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1970 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1969 to current year.
WATER TEMPERATURES: October 1969 to current year.

REMARKS.--Flow affected by natural storage in Yellowstone Lake and diversions for irrigation upstream from station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 398 micromhos Apr. 3, 1970; minimum daily, 83 micromhos June 6, 1976.
WATER TEMPERATURES: Maximum daily, 23.0°C July 9, 1976; minimum daily, 0.0°C on several days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 314 micromhos Dec. 19; minimum daily, 83 micromhos June 6.
WATER TEMPERATURES: Maximum daily, 23.0°C July 9; minimum daily, 0.0°C Feb. 5, 6.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE (DEG C)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
OCT												
29...	1030	2320	242	8.0	84	8	24	5.9	16	.8	4.0	93
NOV												
25...	0900	2030	256	1.0	86	3	23	7.0	19	.9	4.4	101
DEC												
30...	0900	1720	279	1.0	93	1	26	6.9	19	.9	4.7	113
JAN												
21...	1310	1510	274	1.5	85	0	22	7.4	19	.9	4.4	105
FEB												
23...	1745	1600	279	--	86	0	23	7.0	20	.9	4.4	105
MAR												
25...	1315	1550	273	4.0	87	5	22	7.9	20	.9	4.8	100
MAY												
12...	1515	7860	140	9.0	55	3	14	4.9	7.2	.4	2.1	64
JUN												
07...	1120	20300	91	10.0	34	1	9.1	2.8	5.8	.4	1.3	41
JUL												
26...	1515	7080	161	19.0	53	0	14	4.3	11	.7	2.6	68
AUG												
25...	1420	3940	194	18.0	67	0	18	5.4	13	.7	3.2	85
SEP												
28...	1515	2560	231	12.0	76	0	20	6.3	16	.8	3.9	97

DATE	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT												
29...	27	8.3	.6	20	152	.21	952	.08	.01	.01	70	0
NOV												
25...	30	9.2	.7	23	168	.23	921	.33	.02	.03	30	10
DEC												
30...	37	11	.8	26	189	.26	878	.37	.01	.04	0	0
JAN												
21...	34	9.9	.7	23	173	.24	705	.26	.01	.01	20	10
FEB												
23...	34	11	.8	24	177	.24	765	.28	.00	.01	70	0
MAR												
25...	41	9.8	.8	23	179	.24	749	.14	.01	.01	20	10
MAY												
12...	13	2.7	.3	17	94	.13	2000	.18	--	.02	250	20
JUN												
07...	8.2	2.3	.3	15	65	.09	3560	.07	.02	.01	90	10
JUL												
26...	19	5.5	.5	17	108	.15	2070	.11	.03	.03	80	0
AUG												
25...	20	7.0	.6	19	129	.18	1370	.19	.01	.01	20	0
SEP												
28...	24	7.4	.6	21	147	.20	1020	.04	.00	.03	40	10

06192500 YELLOWSTONE RIVER NEAR LIVINGSTON, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	225	240	268	261	256	254	262	254	97	95	152	203
2	227	238	262	273	260	270	266	247	95	97	149	204
3	229	238	253	276	260	272	260	230	86	102	152	211
4	229	235	241	285	283	279	263	208	85	105	155	207
5	229	238	243	262	287	266	261	189	87	104	158	208
6	229	238	249	252	289	268	261	201	83	107	164	210
7	230	237	248	254	310	261	260	202	85	108	163	208
8	229	235	243	259	301	259	249	186	88	109	163	207
9	228	235	246	253	271	260	239	162	88	109	165	213
10	231	240	248	254	262	258	230	151	85	110	165	212
11	230	240	246	258	269	275	235	145	87	113	168	213
12	235	240	253	254	265	261	221	139	92	117	169	215
13	228	246	251	252	258	260	216	147	98	119	171	210
14	228	242	251	255	256	278	210	137	105	124	172	212
15	228	242	270	256	260	263	212	128	111	127	174	215
16	228	241	262	246	267	260	217	126	108	129	177	217
17	229	235	273	231	262	264	228	124	109	131	176	225
18	231	241	313	186	266	258	233	108	111	129	186	218
19	231	245	314	245	265	262	238	98	111	129	179	215
20	229	252	284	246	268	254	245	99	104	132	180	202
21	229	256	268	241	267	259	245	98	92	136	181	210
22	219	255	268	258	267	261	245	98	92	148	183	222
23	211	255	269	209	268	265	240	98	97	140	185	221
24	221	243	267	256	267	261	245	102	106	145	188	212
25	229	245	259	183	268	257	245	102	112	146	186	213
26	227	249	258	252	267	258	240	104	112	147	188	216
27	225	253	259	257	263	260	241	103	113	148	188	221
28	225	258	259	254	261	260	243	102	112	149	192	222
29	228	262	262	251	260	258	241	98	107	150	192	223
30	228	278	268	250	---	261	243	107	106	152	194	226
31	228	---	267	248	---	259	---	98	---	157	197	---
MONTH	228	245	262	249	269	263	241	142	99	126	175	214

YEAR MAX 314 MIN 83 MEAN 209

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.0	7.0	2.0	0.5	4.0	0.5	7.5	13.5	12.5	20.0	16.5	19.0
2	12.0	7.0	3.5	0.5	2.5	0.5	8.0	12.0	12.0	13.0	17.5	18.0
3	12.5	8.0	4.5	1.0	1.0	0.5	10.0	12.5	11.0	15.0	16.5	17.5
4	12.0	8.5	4.5	1.0	0.5	1.0	7.5	10.0	12.5	14.0	17.5	18.0
5	13.5	8.0	4.0	1.0	0.0	1.0	11.0	10.5	12.0	16.5	18.0	19.0
6	12.0	7.5	4.5	0.5	0.0	2.5	11.0	10.0	11.0	18.0	19.0	14.5
7	11.0	6.0	5.5	0.0	1.0	3.5	11.5	13.0	12.0	16.5	18.0	14.5
8	9.5	5.0	4.5	1.5	2.0	3.0	12.5	13.5	13.0	16.0	16.0	14.5
9	9.5	4.0	6.0	2.0	2.5	4.5	8.5	12.0	12.5	23.0	17.0	15.0
10	10.5	4.0	6.0	1.5	2.5	4.0	11.0	11.5	11.5	19.5	17.0	15.0
11	9.5	3.5	4.5	1.0	2.5	2.0	11.0	9.0	10.5	19.0	17.0	12.5
12	9.0	2.5	3.0	2.0	2.5	2.5	11.5	11.0	10.5	16.0	18.5	13.5
13	8.5	3.5	1.0	1.0	3.0	3.0	9.5	12.0	6.5	18.5	16.0	14.5
14	9.0	4.0	0.5	1.5	2.0	3.0	10.0	9.5	7.5	19.0	18.0	14.5
15	8.0	4.5	1.0	2.0	3.0	5.0	8.0	9.5	10.5	18.5	15.5	14.0
16	8.5	4.5	0.5	4.0	2.0	7.5	6.0	10.0	10.0	19.5	16.0	15.5
17	10.5	4.0	0.0	5.0	3.0	7.5	7.0	14.0	11.0	19.0	16.5	15.0
18	10.5	3.5	1.0	4.5	2.0	7.5	8.5	12.0	12.5	17.5	15.0	14.0
19	9.5	3.5	1.0	4.5	2.5	5.5	9.0	10.0	14.0	16.5	17.0	13.5
20	9.5	1.5	2.0	3.0	3.5	4.5	7.5	11.0	13.0	20.0	17.0	14.5
21	6.5	0.5	1.5	3.0	3.0	4.0	10.5	10.0	14.0	17.0	18.0	15.5
22	6.0	1.0	1.0	4.0	2.5	5.5	7.0	9.5	11.0	19.0	19.0	13.5
23	6.0	2.0	1.5	4.0	4.0	6.0	9.5	9.5	9.5	21.0	16.0	13.5
24	0.5	2.5	1.5	2.5	5.0	6.0	11.5	9.5	11.0	19.0	19.5	14.0
25	1.5	2.5	2.0	0.5	4.5	5.5	8.0	10.0	10.0	19.5	18.0	13.5
26	3.5	1.0	2.5	0.5	6.0	5.5	6.0	12.0	12.5	19.5	15.0	12.5
27	6.0	0.5	2.0	1.0	5.5	5.0	5.0	12.0	13.5	18.0	16.0	12.0
28	5.5	0.5	2.0	3.0	4.5	5.0	9.0	10.5	15.0	19.0	16.5	13.5
29	6.0	1.0	2.0	4.0	3.0	6.0	9.0	9.5	15.5	18.0	17.0	15.5
30	7.0	0.5	1.5	4.5	---	8.0	11.0	10.0	16.0	19.0	18.0	13.0
31	7.5	---	0.5	3.5	---	9.0	---	11.0	---	17.5	16.0	---
MONTH	8.5	3.5	2.5	2.0	3.0	4.5	9.0	11.0	12.0	18.0	17.0	15.0

YEAR MAX 23.0 MIN 0.0 MEAN 9.0

06200000 BOULDER RIVER AT BIG TIMBER, MT

LOCATION.--Lat 45°50'03", long 109°56'17", in NE¼SE¼ sec.14, T.1 N., R.14 E., Sweet Grass County, Hydrologic Unit 10070002, on left bank at Old Boulder Bridge, 1 mi (2 km) east of Big Timber, and 1.6 mi (2.6 km) upstream from mouth.

DRAINAGE AREA.--523 mi^2 (1,355 km^2).

PERIOD OF RECORD.--April 1947 to December 1953, March 1955 to current year. Monthly discharge only for April 1947, published in WSP 1309.

GAGE.--Water-stage recorder. Altitude of gage is 4,060 ft (1,240 m), from topographic map.

REMARKS.--Records fair. Diversions for irrigation of 13,300 acres (53.8 km^2), of which 250 acres (1.01 km^2) is below station.

AVERAGE DISCHARGE.--27 years, 626 ft^3/s (17.73 m^3/s), 453,500 acre-ft/yr (559 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,840 ft^3/s (279 m^3/s) May 28, 1956, gage height, 7.84 ft (2.390 m); maximum gage height, 8.25 ft (2.515 m) July 8, 1975; minimum discharge, 10 ft^3/s (0.28 m^3/s) about Aug. 26 or 27, 1961.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft^3/s (85.0 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
June 10	0600	*5200	147	*6.18	1.884	July 2	0800	4700	133	6.06	1.847
June 21	1100	4420	125	5.98	1.823						

Minimum discharge, 75 ft^3/s (2.12 m^3/s) Sept. 8, gage height, 2.10 ft (0.640 m), due to temporary storage upstream during construction.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	194	309	150	115	177	120	150	520	3180	4020	727	199
2	187	294	280	120	177	110	165	659	3350	4220	1060	188
3	183	289	270	130	130	100	161	752	3890	3600	820	178
4	173	289	267	140	90	105	159	939	4040	3420	754	169
5	164	280	259	145	80	120	167	1170	4060	3360	702	167
6	164	280	225	140	90	120	182	1330	4400	3360	669	166
7	160	276	240	135	100	140	206	1260	4370	3310	615	186
8	180	272	248	140	140	150	228	1300	4400	3270	573	172
9	187	251	240	150	150	163	263	1500	4610	2970	548	142
10	183	233	236	160	155	156	303	1620	4660	2870	523	169
11	167	263	251	170	167	157	293	2030	4420	2600	488	165
12	177	212	218	170	180	110	314	1850	3710	2290	469	168
13	218	259	130	180	167	120	368	1580	3230	2230	457	192
14	240	263	120	198	164	130	403	2030	2650	1730	427	190
15	259	248	110	233	151	134	381	2400	2020	1390	409	191
16	272	251	125	255	148	149	397	1910	2150	1170	380	188
17	263	272	140	263	154	147	363	1850	2230	1010	354	186
18	263	259	236	236	151	162	345	2530	1830	1130	335	220
19	272	200	409	190	190	170	348	2970	1860	1230	364	254
20	280	150	263	183	164	156	333	2990	2690	1110	349	252
21	354	160	218	208	125	151	336	3170	4040	1010	330	256
22	580	180	205	205	137	149	326	3270	4080	1030	314	261
23	469	272	190	201	167	151	354	3320	3730	954	294	264
24	386	259	208	194	165	149	352	3050	2870	890	319	258
25	335	230	225	148	159	152	367	3180	2400	859	299	260
26	359	190	222	146	155	148	432	2950	2040	829	273	263
27	359	170	198	194	163	145	427	2810	1780	783	282	273
28	330	130	157	201	159	141	384	3440	1970	702	253	274
29	319	110	248	194	152	143	385	3880	2290	601	231	262
30	325	100	194	187	---	143	424	3710	3050	608	224	258
31	325	---	143	180	---	143	---	3510	---	669	209	---
TOTAL	8327	6951	6625	5511	4307	4334	9316	69480	96000	59205	14051	6369
MEAN	269	232	214	178	149	140	311	2241	3200	1910	453	212
MAX	580	309	409	263	190	170	432	3880	4660	4220	1060	274
MIN	160	100	110	115	80	100	150	520	1780	601	209	142
AC-FT	16520	13790	13140	10930	8540	8600	18480	137800	190400	117400	27870	12630

CAL YR 1975 TOTAL 335694 MEAN 920 MAX 8540 MIN 74 AC-FT 665800
WTR YR 1976 TOTAL 290476 MEAN 794 MAX 4660 MIN 80 AC-FT 576200

06202600 STILLWATER RIVER AT NYE, MT

LOCATION.--Lat 45°26'16", long 109°47'27", in SE¼SE¼ sec.31, T.4 S., R.16 E., Stillwater County, Hydrologic Unit 10070005, on right bank 250 ft (76 m) downstream from West Fork, 0.8 mi (1.3 km) northeast of Nye, and at mile 34.1 (54.9 km).
DRAINAGE AREA.--337 mi^2 (873 km^2).
PERIOD OF RECORD.--October 1969 to December 1976 (discontinued).
GAGE.--Water-stage recorder. Altitude of gage is 4,770 ft (1,450 m), from topographic map.
REMARKS.--Records good except those for winter period, which are fair. Diversions for irrigation of about 1,150 acres (4.65 km^2) of which 150 acres (607,000 m^2) lies below station.
AVERAGE DISCHARGE.--7 years, 618 ft^3/s (17.50 m^3/s), 447,700 acre-ft/yr (552 hm^3/yr).
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,710 ft^3/s (247 m^3/s) June 18, 1974, gage height, 6.11 ft (1.862 m); minimum, 23 ft^3/s (0.65 m^3/s) Mar. 2, 15, 1971, gage height, 1.23 ft (0.375 m), result of freezeup, but may have been less during period of ice effect.
EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft^3/s (56.6 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
June 9	0430	*3920	111	*4.89	1.490	July 2	0445	3720	105	4.79	1.460
June 22	0445	3040	86.1	4.44	1.353						

Minimum discharge, 66 ft^3/s (1.87 m^3/s), Mar. 30, gage height, 1.75 ft (0.533 m), but may have been less during period of ice effect.

Discharge, in cubic feet per second, Oct. 1 - Dec. 31

Day	Oct.	Nov.	Dec.	Day	Oct.	Nov.	Dec.	Day	Oct.	Nov.	Dec.	Day	Oct.	Nov.	Dec.	Day	Oct.	Nov.	Dec.
1	236	160	132	8	233	150	115	15	205	126	119	22	187	143	123	29	169	137	110
2	230	161	127	9	230	149	129	16	197	137	118	23	189	134	115	30	169	134	112
3	260	159	122	10	226	148	127	17	205	146	115	24	178	132	116	31	161	--	107
4	255	156	122	11	227	136	123	18	194	145	109	25	183	135	113				
5	244	152	127	12	226	118	122	19	179	139	112	26	180	116	116				
6	249	152	127	13	216	106	119	20	190	135	99	27	172	135	115				
7	240	146	128	14	210	119	119	21	190	112	120	28	173	136	112				

	Oct.	Nov.	Dec.	Cal. Yr.
TOTAL	6403	4154	3670	224269
MEAN	207	138	118	613
MAX	260	161	132	3620
MIN	161	106	99	80
AC-FT	12700	8240	7280	444838

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	190	200	200	135	110	95	107	205	2260	3180	1060	271
2	186	200	241	120	100	85	107	234	2530	3160	1310	265
3	181	195	217	120	100	80	101	260	3050	2620	1000	263
4	172	200	200	120	95	85	107	322	3500	2550	940	259
5	176	195	205	120	90	90	111	360	3540	2510	905	252
6	172	190	186	120	110	90	120	376	3600	2550	798	249
7	168	190	186	120	149	95	127	360	3420	2550	736	326
8	190	186	190	110	132	91	141	471	3540	2510	677	322
9	205	159	186	110	123	81	158	642	3620	2440	631	290
10	200	176	190	110	110	87	156	753	3500	2420	600	265
11	200	176	190	105	110	97	156	1040	3320	2290	560	251
12	205	159	172	100	110	97	172	927	2740	2150	547	273
13	222	176	172	100	110	99	201	843	2360	2050	516	325
14	211	181	140	105	111	96	210	1250	1880	1730	491	303
15	211	176	120	110	109	98	202	1450	1520	1490	467	285
16	211	186	140	130	106	94	208	1200	1510	1400	448	270
17	200	190	160	135	108	98	190	1180	1450	1290	418	265
18	200	172	170	138	109	104	181	1710	1280	1660	416	283
19	200	150	170	128	113	106	176	2060	1340	1630	441	327
20	195	130	170	122	109	95	163	2050	1980	1380	402	315
21	222	150	160	125	98	96	168	2190	2710	1240	390	287
22	315	170	160	119	106	93	163	2350	2850	1210	378	270
23	253	160	159	119	105	97	168	2290	2530	1140	377	307
24	205	160	155	113	105	93	159	2060	1890	1040	383	310
25	205	160	155	105	104	97	172	2200	1700	1040	366	307
26	234	150	148	100	104	94	195	1980	1480	990	356	311
27	228	140	144	105	109	97	195	1980	1320	915	358	294
28	222	130	138	110	108	93	168	2510	1450	831	333	274
29	211	130	148	115	103	99	168	2870	1850	753	307	258
30	211	150	144	116	---	95	176	2720	2240	820	287	247
31	211	---	131	113	---	99	---	2600	---	903	279	---
TOTAL	6412	5087	5247	3598	3156	2916	4826	43443	71960	54442	17177	8524
MEAN	207	170	169	116	109	94.1	161	1401	2399	1756	554	284
MAX	315	200	241	138	149	106	210	2870	3620	3180	1310	327
MIN	168	130	120	100	90	80	101	205	1280	753	279	247
AC-FT	12720	10090	10410	7140	6260	5780	9570	86170	142700	108000	34070	16910

CAL YR 1975 TOTAL 279812 MEAN 767 MAX 7110 MIN 79 AC-FT 555000
WTR YR 1976 TOTAL 226788 MEAN 620 MAX 3620 MIN 80 AC-FT 449800

06204050 WEST ROSEBUD CREEK NEAR ROSCOE, MT

LOCATION.--Lat 45°14'35", long 109°43'50", in NE¼ sec.10, T.7 S., R.16 E., Stillwater County, Hydrologic Unit 10070005, on left bank at Mystic Lake powerplant, 2 mi (3 km) downstream from Mystic Lake, and 13 mi (21 km) southwest of Roscoe.

DRAINAGE AREA.--52.1 mi^2 (135 km^2).

PERIOD OF RECORD.--September 1965 to current year.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 6,535.60 ft (1,992.051 m) above mean sea level.

REMARKS.--Records good. Flow regulated by Mystic Lake (see p.582).

AVERAGE DISCHARGE.--11 years, 134 ft^3/s (3.795 m^3/s), 34.93 in/yr (887 mm/yr), 97,080 acre-ft/yr (120 hm^3/yr), adjusted for change in contents in Mystic Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,630 ft^3/s (46.2 m^3/s) July 6, 1975, gage height, 4.71 ft (1.436 m); minimum daily, 2.5 ft^3/s (0.071 m^3/s) Apr. 3, 4, 6, 7, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,050 ft^3/s (29.7 m^3/s) July 2, gage height, 3.42 ft (1.042 m); minimum daily, 19 ft^3/s (0.538 m^3/s) Oct. 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	115	38	86	115	107	53	27	47	103	406	338	149
2	115	40	86	115	109	53	27	50	67	802	396	127
3	115	40	86	115	109	53	29	52	217	669	399	127
4	96	40	76	115	107	53	29	55	217	558	357	98
5	86	37	82	113	105	53	28	53	217	526	323	101
6	88	37	88	113	107	53	29	53	220	565	287	105
7	88	38	86	113	109	53	31	53	217	620	278	133
8	82	38	86	115	109	53	32	55	216	635	267	152
9	74	38	84	113	109	52	32	69	217	681	258	175
10	60	38	86	113	109	52	31	76	217	662	244	149
11	50	53	103	111	90	52	32	86	216	677	223	103
12	52	76	119	111	86	55	33	92	212	639	202	105
13	52	78	119	113	86	57	40	109	212	816	200	131
14	50	76	119	113	86	57	46	133	212	502	202	131
15	41	74	121	111	86	57	46	139	210	444	202	163
16	40	74	117	111	86	57	46	145	212	376	202	197
17	41	76	117	111	86	57	44	86	212	383	170	195
18	40	78	117	109	84	29	44	33	212	468	125	196
19	38	76	117	111	86	31	44	34	212	598	125	195
20	38	76	117	111	86	27	44	33	225	526	127	82
21	43	76	117	109	86	25	44	34	320	465	103	19
22	41	76	119	109	86	25	44	36	468	423	131	78
23	43	78	117	109	60	27	44	32	506	413	195	200
24	41	78	117	109	53	26	44	30	420	396	173	192
25	40	78	117	109	53	26	47	33	357	380	182	187
26	40	80	115	109	53	27	47	29	316	390	190	187
27	41	82	115	109	53	26	44	29	275	341	163	185
28	40	82	115	109	53	27	46	63	244	298	101	185
29	40	86	115	109	53	27	47	207	233	267	147	177
30	40	86	115	109	---	27	47	205	236	281	170	180
31	40	---	115	109	---	27	---	202	---	301	170	---
TOTAL	1810	1923	3289	3451	2492	1297	1168	2353	7416	15298	6650	4403
MEAN	58.4	64.1	106	111	85.9	41.8	38.9	75.9	247	493	215	147
MAX	115	86	121	115	109	57	47	207	506	802	399	200
MIN	38	37	76	109	53	25	27	29	67	267	101	19
AC-FT	3590	3810	6520	6850	4940	2570	2320	4670	14710	30340	13190	8730
MEAN†	44.4	33.8	35.1	22.5	22.9	21.5	32.9	220	404	504	216	121
CFSM†	.85	.65	.67	.43	.44	.41	.63	4.22	7.75	9.67	4.15	2.32
IN†	.98	.72	.78	.50	.47	.47	.71	4.86	8.65	11.16	4.78	2.59
AC-FT†	2730	2010	2160	1380	1320	1320	1960	13510	24050	31000	13290	7210

OBSERVED

CAL YR 1975	TOTAL	51,251	MEAN	140	MAX	1520	MIN	30	AC-FT	101700
WTR YR 1976	TOTAL	51,550	MEAN	141	MAX	802	MIN	19	AC-FT	102200

ADJUSTED

CAL YR 1975	TOTAL	52,774	MEAN	145	CFSM	2.78	IN	37.67	AC-FT	104720
WTR YR 1976	TOTAL	51,392	MEAN	140	CFSM	2.69	IN	36.68	AC-FT	101900

† Adjusted for change in contents of Mystic Lake.

06205000 STILLWATER RIVER NEAR ABSAROKEE, MT

LOCATION.--Lat 45°33'04", long 109°23'12", in NE¼NW¼ sec.28, T.3 S., R.19 E., Stillwater County, Hydrologic Unit 10070005, on right bank 3 mi (5 km) downstream from Rosebud Creek, 3.5 mi (5.6 km) northeast of Absarokee, 9 mi (14 km) southwest of Columbus, and at mile 10.8 (17.4 km).

DRAINAGE AREA.--975 mi^2 (2,525 km^2).

PERIOD OF RECORD.--July 1910 to September 1914 (no winter records), March 1935 to current year.

REVISED RECORDS.--WSP 1309: 1911(M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,874.67 ft (1,180.999 m) above mean sea level (levels by Soil Conservation Service). Prior to Oct. 1, 1914, nonrecording gage, and Mar. 26, 1935, to Sept. 30, 1942, nonrecording gage, at bridge 2 mi (3 km) upstream at different datums.

REMARKS.--Records good except those for winter period, which are poor. Flow partly regulated by Mystic Lake (see p. 582). Diversions for irrigation of about 24,300 acres (98.3 km^2), of which 400 acres (1.62 km^2) lies below station.

AVERAGE DISCHARGE.--41 years (1935-76), 979 ft^3/s (27.73 m^3/s), 709,300 acre-ft/yr (875 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft^3/s (340 m^3/s) June 15, 1967, gage height, 7.17 ft (2.185 m); minimum observed, 58 ft^3/s (1.64 m^3/s) Apr. 2, 1936.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,400 ft^3/s (125 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
June 9	0900	*5550	157	4.71	1.436	July 2	0945	5390	153	*4.72	1.438
June 22	0915	4760	135	4.34	1.322						

Minimum daily discharge, 260 ft^3/s (7.36 m^3/s) Mar. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	556	562	380	340	425	310	317	1290	3590	4190	2120	703
2	550	550	616	330	427	300	341	1580	3750	5060	2800	662
3	539	550	668	320	400	280	310	1650	4210	4520	2490	616
4	522	539	623	320	300	270	321	1920	4840	4120	2260	610
5	494	522	562	320	280	260	344	2080	4980	4040	2090	574
6	483	505	505	320	300	300	356	2170	5100	4110	1920	592
7	473	500	505	310	350	320	377	2050	5140	4210	1790	642
8	539	489	505	310	450	340	386	1940	5140	4240	1680	675
9	533	451	494	300	520	342	421	2000	5210	4120	1580	696
10	533	435	494	300	473	347	447	2080	5020	4120	1470	710
11	505	435	505	300	441	387	424	2290	4740	4060	1400	682
12	517	420	467	300	455	315	436	2300	4190	3840	1330	696
13	610	533	489	300	433	323	469	2100	3650	3730	1280	745
14	580	511	380	300	406	347	515	2520	3410	3290	1220	760
15	574	500	350	300	374	327	503	3410	2750	2800	1180	717
16	556	489	350	310	360	357	574	2950	2560	2550	1130	710
17	533	490	370	320	378	510	615	2770	2720	2370	1080	717
18	533	490	400	330	357	682	559	3120	2430	2670	967	774
19	522	450	450	360	334	626	540	3680	2340	3040	951	887
20	511	370	450	380	383	360	502	3710	2870	2830	911	880
21	539	370	450	370	333	347	497	3820	3970	2500	872	696
22	738	400	450	360	370	333	478	3970	4540	2370	849	642
23	682	494	440	360	358	371	522	3940	4440	2260	872	760
24	592	500	440	350	328	351	500	3710	3630	2120	887	903
25	533	478	440	340	335	330	494	3500	3140	2040	849	911
26	598	430	430	360	318	310	668	3400	2720	2010	834	943
27	642	400	400	380	344	325	710	3500	2400	1930	872	951
28	604	380	380	400	329	311	655	3800	2270	1720	767	911
29	586	350	370	445	321	313	689	4200	2520	1570	662	872
30	604	300	360	442	---	305	919	4000	3050	1570	662	849
31	592	---	350	425	---	308	---	3800	---	1690	662	---
TOTAL	17373	13893	14073	10602	10882	10907	14889	89250	111320	95670	40437	22486
MEAN	560	463	454	342	375	352	496	2879	3711	3087	1304	750
MAX	738	562	668	445	520	682	919	4200	5210	5060	2800	951
MIN	473	300	350	300	280	260	310	1290	2270	1570	662	574
AC-FT	34460	27560	27910	21030	21580	21630	29530	177000	220800	189800	80210	44600

CAL YR 1975 TOTAL 542395 MEAN 1486 MAX 10500 MIN 170 AC-FT 1076000
WTR YR 1976 TOTAL 451802 MEAN 1234 MAX 5210 MIN 260 AC-FT 896100

06205200 YELLOWSTONE RIVER AT LAUREL, MT

LOCATION.--Lat 45°39'15", long 108°45'32", in SW¼SW¼SW¼ sec.15, T.2 S., R.24 E., Yellowstone County, Hydrologic Unit 10070004, at bridge on U.S. Highway 310, 2.5 mi (4.0 km) upstream from Clarks Fork Yellowstone River, 1.3 mi (2.1 km) southeast of Laurel, and at mile 396.3 (637.6 km).

DRAINAGE AREA.--11,003 mi² (28,498 km²).

PERIOD OF RECORD.--Water years 1974 to current year.

REMARKS.--Water discharge computed by subtracting the discharge of Clarks Fork Yellowstone River near Silesia (station 06208800) from that of Yellowstone River at Billings (station 06214500).

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	CHEMICAL OXYGEN DEMAND (HIGH LEVEL) (MG/L)	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)
OCT											
06...	1030	3680	285	8.3	20.0	14.0	2	8.8	96	4	--
25...	1600	5160	300	8.5	8.0	3.5	2	10.8	92	9	.6
NOV											
05...	1530	4670	305	8.0	20.5	8.0	2	11.4	110	27	--
24...	1000	3490	325	8.1	1.0	.0	3	12.6	97	5	1.0
DEC											
08...	1000	4410	240	8.2	7.0	3.0	7	11.6	97	10	--
23...	1400	3420	340	8.3	5.0	.0	2	13.2	102	52	.2
JAN											
12...	0930	3000	355	7.7	-4.5	.0	1	12.6	97	5	--
26...	1000	2850	345	8.2	-6.0	.0	3	13.0	100	10	.8
FEB											
10...	1030	3770	498	7.9	3.5	.0	8	13.0	100	4	--
24...	1215	2790	359	8.1	13.0	2.0	10	12.2	99	37	1.9
MAR											
09...	1000	3350	350	7.9	6.5	1.0	5	12.6	100	8	--
31...	0930	2720	320	8.1	12.0	6.0	5	11.0	100	14	1.2
APR											
13...	0945	4780	288	7.9	17.5	12.5	20	8.9	94	11	--
27...	1230	5920	322	7.4	2.0	4.0	10	11.2	97	16	--
MAY											
13...	1030	17600	202	8.0	17.0	10.5	20	9.6	97	32	--
25...	1030	26600	148	8.1	18.5	11.5	40	9.5	98	13	1.0
JUN											
10...	1000	31600	110	7.5	16.7	14.0	35	8.6	93	42	2.2
24...	1030	27600	130	7.9	19.0	12.0	20	9.8	102	17	1.9
JUL											
13...	1115	18100	140	7.4	21.0	16.0	7	8.8	100	3	--
27...	1345	10200	190	8.0	30.5	20.5	5	8.6	108	7	2.0
AUG											
10...	0900	8480	238	7.9	20.5	17.5	6	8.0	93	15	--
24...	1200	5080	262	8.0	25.5	18.5	6	8.2	98	9	1.0
SEP											
08...	1015	4230	292	8.0	11.0	13.0	5	9.1	97	12	--
22...	1145	4920	260	8.9	24.5	15.5	3	9.8	107	7	1.1

DATE	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)
OCT											
06...	20	12	--	--	--	--	--	--	--	--	--
25...	--	33	120	3	32	8.9	18	.7	3.1	138	0
NOV											
05...	400	<1	--	--	--	--	--	--	--	--	--
24...	66	5	120	2	32	9.8	19	.8	3.2	144	0
DEC											
08...	260	7	--	--	--	--	--	--	--	--	--
23...	16	1	130	11	34	11	21	.8	3.5	145	0
JAN											
12...	170	17	--	--	--	--	--	--	--	--	--
26...	310	5	130	5	36	10	22	.8	3.3	154	0
FEB											
10...	360	3	--	--	--	--	--	--	--	--	--
24...	31	<1	130	5	33	11	22	.8	3.5	150	0
MAR											
09...	170	4	--	--	--	--	--	--	--	--	--
31...	40	2	120	0	32	9.9	21	.8	3.8	151	0
APR											
13...	120	14	--	--	--	--	--	--	--	--	--
27...	1100	390	120	5	31	10	20	.8	2.8	139	0
MAY											
13...	400	130	--	--	--	--	--	--	--	--	--
25...	400	89	59	0	15	5.3	6.4	.4	1.5	74	0

06205200 YELLOWSTONE RIVER AT LAUREL, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)
JUN											
10...	240	100	--	--	--	--	--	--	--	--	--
24...	1000	250	51	0	14	3.8	8.4	.5	1.6	64	0
JUL											
13...	800	140	--	--	--	--	--	--	--	--	--
27...	50	18	69	0	18	5.9	11	.6	2.2	89	0
AUG											
10...	--	80	--	--	--	--	--	--	--	--	--
24...	--	20	95	6	25	7.9	14	.6	2.7	108	0
SEP											
08...	44	10	--	--	--	--	--	--	--	--	--
22...	60	83	100	0	26	8.9	17	.7	.4	129	0

DATE	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	SUSPENDED SOLIDS (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)
OCT											
06...	103	--	--	--	--	193	--	.26	1920	28	.01
25...	113	33	5.9	.4	14	190	184	.26	2650	16	.05
NOV											
05...	110	--	--	--	--	181	--	.25	2280	0	.01
24...	118	33	7.5	.5	17	214	193	.29	2020	6	.17
DEC											
08...	113	--	--	--	--	201	--	.27	2390	13	.17
23...	119	45	7.5	.5	17	198	211	.27	1830	5	.26
JAN											
12...	123	--	--	--	--	225	--	.31	1820	4	.28
26...	126	46	8.1	.5	16	215	218	.29	1650	6	.20
FEB											
10...	120	--	--	--	--	319	--	.43	3250	7	.26
24...	123	43	9.2	.5	14	223	210	.30	1680	0	.12
MAR											
09...	180	--	--	--	--	255	--	.35	2310	7	.16
31...	124	43	8.0	.6	13	217	206	.30	1590	10	.00
APR											
13...	108	--	--	--	--	209	--	.28	2700	54	.18
27...	114	48	5.6	.4	13	192	200	.26	3070	12	.10
MAY											
13...	98	--	--	--	--	155	--	.21	7370	240	.29
25...	61	12	2.1	.2	13	120	92	.16	8620	123	.17
JUN											
10...	40	--	--	--	--	77	--	.10	6570	117	.08
24...	53	7.6	2.4	.2	13	76	83	.10	5660	50	.07
JUL											
13...	52	--	--	--	--	101	--	.14	4940	25	.06
27...	73	22	4.5	.4	13	117	122	.16	3220	21	.00
AUG											
10...	83	--	--	--	--	140	--	.19	3210	17	.01
24...	89	25	5.7	.4	14	151	148	.21	2070	12	.00
SEP											
08...	101	--	--	--	--	169	--	.23	1930	20	.02
22...	106	29	6.4	.5	13	170	165	.23	2260	1	.00

06205200 YELLOWSTONE RIVER AT LAUREL, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	DISSOLVED ORGANIC CARBON (C) (MG/L)	SUSPENDED ORGANIC CARBON (C) (MG/L)
OCT										
06...	.03	.13	.16	.17	.02	--	--	3.0	--	--
25...	.03	.43	.46	.51	.02	160	20	5.9	3.2	.3
NOV										
05...	.04	.26	.30	.31	.03	--	--	3.2	--	--
24...	.00	1.6	1.6	1.8	.02	210	20	3.2	--	--
DEC										
08...	.02	.38	.40	.57	.03	--	--	4.5	--	--
23...	.01	.07	.08	.34	.01	230	30	3.2	--	--
JAN										
12...	.04	.42	.46	.74	.00	--	--	2.7	--	--
26...	.02	.27	.29	.49	.02	220	10	13	8.2	--
FEB										
10...	.03	.30	.33	.59	.02	--	--	4.5	3.9	--
24...	.00	.41	.41	.53	.01	230	20	--	--	--
MAR										
09...	.03	.26	.29	.45	.02	--	--	2.0	--	--
31...	.03	3.3	3.3	3.3	.03	220	10	7.6	--	--
APR										
13...	.00	.59	.59	.77	.23	--	--	3.9	--	--
27...	.02	.24	.26	.36	.04	150	100	3.9	2.9	1.3
MAY										
13...	.02	1.3	1.3	1.6	.26	--	--	13	--	--
25...	.02	.53	.55	.72	.21	70	30	7.4	--	--
JUN										
10...	.02	.36	.38	.46	.16	--	--	5.0	--	--
24...	.01	.32	.33	.40	.14	150	70	4.6	--	--
JUL										
13...	.00	.19	.19	.25	.02	--	--	5.6	--	--
27...	.01	.22	.23	.23	.03	110	360	11	6.9	1.3
AUG										
10...	.01	.24	.25	.26	.03	--	--	2.3	--	--
24...	.02	.35	.37	.37	.01	170	30	2.8	--	--
SEP										
08...	.01	.35	.36	.38	.03	--	--	2.3	--	--
22...	.00	.24	.24	.24	.01	170	--	6.3	--	--

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	DISSOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)
OCT											
25...	1600	160	20	17	14	10	0	0	0	30	0
JAN											
26...	1000	170	20	12	12	0	0	<10	0	0	0
APR											
27...	1230	600	50	11	11	10	10	<10	0	0	0
JUL											
27...	1345	360	90	11	11	0	0	<10	1	10	10

DATE	TOTAL COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	DISSOLVED LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)
OCT										
25...	0	1	100	0	2	40	40	0	0	.0
JAN										
26...	10	1	170	<100	2	50	60	10	0	.1
APR										
27...	10	2	640	<100	2	40	40	20	0	.0
JUL										
27...	10	3	330	<100	12	40	30	20	30	.0

06205200 YELLOWSTONE RIVER AT LAUREL, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
25...	.0	3	2	<50	3	0	0	1.7	0	0
JAN										
26...	.1	3	2	<50	4	1	1	1.1	20	0
APR										
27...	.0	2	2	<50	18	0	0	1.3	60	10
JUL										
27...	.0	2	0	<50	2	0	0	.6	0	10

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .062 MM
OCT						
25...	1600	3.5	5160	16	223	--
NOV						
24...	1000	.0	3490	18	170	--
DEC						
23...	1400	.0	3420	11	102	--
JAN						
26...	1000	.0	2850	28	215	--
FEB						
24...	1215	2.0	2790	18	136	--
MAR						
31...	0930	6.0	2720	19	140	--
APR						
27...	1230	4.0	5920	48	767	--
MAY						
25...	1030	11.5	26600	225	16200	--
JUN						
24...	1030	12.0	27600	174	13000	51
JUL						
27...	1345	20.5	10200	28	771	58
AUG						
24...	1200	18.5	5080	15	206	86
SEP						
22...	1145	15.5	4920	14	186	42

06205450 CLARKS FORK YELLOWSTONE RIVER AT MONTANA-WYOMING STATE LINE, NEAR COOKE CITY, MT

LOCATION.--Lat 44°57'28", long 109°48'21", Park County, WY, Hydrologic Unit 10070006, Shoshone National Forest, at bridge on U.S. Highway 12, 300 ft (91 m) upstream from Pilot Creek, 0.9 mi (1.4 km) downstream from Rock Creek, 1.8 mi (2.9 km) northwest of Crazy Creek Campground, and 7.5 mi (12.1 km) southeast of Cooke City, Mt.

PERIOD OF RECORD.--Water years 1975-76.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TOTAL ALUMINUM (AL) (UG/L)	DISSOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	TOTAL CADMIUM (CD) (UG/L)
MAY												
11...	1515	326	60	8.4	2.0	890	40	1	0	0	0	<10
JUN												
03...	1330	803	50	7.1	5.0	520	--	0	--	0	--	<10
JUL												
08...	1650	860	41	9.0	9.5	--	50	--	0	--	0	--
AUG												
03...	1230	257	140	8.2	12.0	150	--	0	--	0	--	<10
SEP												
08...	1030	84	70	7.0	8.5	210	10	0	0	0	0	<10

DATE	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	DISSOLVED LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)
MAY												
11...	0	0	0	10	6	1100	100	<100	1	0	0	30
JUN												
03...	--	10	--	<10	--	730	--	<100	--	0	--	30
JUL												
08...	0	--	0	--	6	--	80	--	1	--	0	--
AUG												
03...	--	0	--	10	--	150	--	<100	--	0	--	10
SEP												
08...	0	0	10	<10	1	190	10	<100	0	0	0	20

DATE	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED MERCURY (HG) (UG/L)	TOTAL MOLYBDENUM (MO) (UG/L)	DISSOLVED MOLYBDENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DISSOLVED NICKEL (NI) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	DISSOLVED VANADIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
MAY												
11...	10	.0	.0	0	0	<50	2	0	0	1.1	0	20
JUN												
03...	--	.0	--	0	--	<50	--	0	--	--	0	--
JUL												
08...	20	--	.5	--	0	--	0	--	0	--	--	0
AUG												
03...	--	13	--	0	--	<50	--	0	--	--	0	--
SEP												
08...	0	.0	.1	0	0	<50	0	0	0	--	20	10

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
MAY					
11...	1515	2.0	326	44	39
JUN					
03...	1330	5.0	803	18	39
JUL					
08...	1650	9.5	860	18	42
AUG					
03...	1245	12.0	257	7	4.9
SEP					
08...	1030	8.5	84	4	.91

06207500 CLARKS FORK YELLOWSTONE RIVER NEAR BELFRY, MT

LOCATION.--Lat 45°00'40", long 109°04'00", in E½NE¼ sec.31, T.9 S., R.22 E., Carbon County, Hydrologic Unit 10070006, on left bank 0.4 mi (0.6 km) upstream from county road bridge and Big Sand Coulee, 0.8 mi (1.3 km) north of Wyoming-Montana State line, 9.5 mi (15.3 km) southwest of Belfry, and at mile 78.5 (126.3 km).

DRAINAGE AREA.--1,154 mi^2 (2,989 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1921 to current year. Monthly discharge only for some periods, published in WSP 1309. Published as Clarks Fork at Chance prior to October 1956 and as Clarks Fork Yellowstone River at Chance October 1956 to September 1968.

REVISED RECORDS.--WSP 1309: 1922(M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 3,980 ft (1,210 m), from topographic map. Prior to Nov. 15 1934, nonrecording gage, and Nov. 15, 1934, to July 26, 1951, water-stage recorder at bridge 0.4 mi (0.6 km) downstream at different datum. July 27, 1951, to Sept. 30, 1953, water-stage recorder at present site at datum 0.98 ft (0.299 m) higher.

REMARKS.--Water-discharge records good except those for November to April, which are fair. Diversions for irrigation of about 11,100 acres (44.9 km^2) above station.

AVERAGE DISCHARGE.--55 years, 959 ft^3/s (27.16 m^3/s), 694,800 acre-ft/yr (857 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,700 ft^3/s (360 m^3/s) July 6, 1975, gage height, 8.77 ft (2.673 m); minimum observed, 32 ft^3/s (0.91 m^3/s) Apr. 26, 1961, result of discharge measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5,400 ft^3/s (153 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
June 10	0430	*7710	218	*6.87	2.094	July 2	0500	6990	198	6.55	1.996

Minimum discharge, 83 ft^3/s (2.35 m^3/s) Feb. 4 (result of freezeup), gage height, 0.81 ft (0.247 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	162	434	373	265	292	220	260	718	4820	5690	1760	397
2	157	423	501	255	292	200	300	908	4870	6550	2010	375
3	157	434	514	260	281	195	310	1110	5500	5820	1860	363
4	151	428	462	270	149	190	300	1280	6240	5450	1700	364
5	149	423	447	270	130	200	300	1240	6590	5350	1460	350
6	136	406	427	270	150	210	320	1210	6780	5430	1300	349
7	132	406	429	280	190	220	360	1250	6910	5400	1200	384
8	149	428	434	290	220	230	400	1600	7010	5290	1100	427
9	165	412	438	310	270	235	470	2100	7020	5050	1030	384
10	159	357	442	310	310	245	580	2220	7190	5180	942	361
11	163	418	441	270	279	240	530	2860	6670	5090	869	342
12	170	357	414	280	301	230	560	2560	5590	4540	823	343
13	250	369	380	290	293	220	630	2290	4970	4230	781	357
14	295	395	320	280	277	230	700	3030	4160	3730	761	342
15	269	397	290	290	260	240	641	3810	3320	3260	722	328
16	285	406	270	300	257	253	634	3050	3120	2980	691	319
17	314	407	280	295	262	305	578	3000	3050	2820	657	321
18	325	410	290	290	260	327	524	3990	2740	2860	630	348
19	340	350	340	280	228	316	494	4710	2650	2930	618	745
20	314	290	348	290	263	260	478	4800	3150	2840	603	671
21	314	270	318	320	238	251	478	4920	4480	2530	584	532
22	428	250	362	330	239	258	467	5140	5160	2380	563	479
23	542	245	339	331	275	267	494	4910	4960	2290	541	601
24	456	240	342	319	264	268	483	4450	4040	2190	540	627
25	406	230	354	265	259	265	536	4550	3460	2110	540	555
26	461	220	361	230	261	260	669	4300	2880	2030	525	524
27	489	210	374	260	264	255	641	4230	2630	1950	507	491
28	467	200	313	337	275	250	584	4980	2790	1840	475	457
29	445	210	306	331	250	250	566	5590	3520	1650	438	426
30	439	230	354	325	---	250	608	5590	4400	1550	416	401
31	456	---	280	304	---	250	---	5440	---	1620	418	---
TOTAL	9145	10255	11543	8997	7289	7590	14895	101836	140670	112620	27064	12963
MEAN	295	342	372	290	251	245	497	3285	4689	3633	873	432
MAX	542	434	514	337	310	327	700	5590	7190	6550	2010	745
MIN	132	200	270	230	130	190	260	718	2630	1560	416	319
AC-FT	18140	20340	22900	17850	14460	15050	29540	202000	279000	223400	53680	25710

CAL YR 1975 TOTAL 439343 MEAN 1204 MAX 11100 MIN 132 AC-FT 871400
WTR YR 1976 TOTAL 464867 MEAN 1270 MAX 7190 MIN 130 AC-FT 922100

06207500 CLARKS FORK YELLOWSTONE RIVER NEAR BELFRY, MT--Continued

WATER-QUALITY RECORDS

LOCATION.--Samples collected at bridge on county road, 0.4 mi (0.6 km) downstream from discharge station, just upstream from Sand Coulee, 0.8 mi (1.3 km) north of Wyoming-Montana State line, 9.5 mi (15.3 km) southwest of Belfry, and at mile 78.1 (125.7 km).

PERIOD OF RECORD.--Water years 1966 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
OCT											
01...	1230	162	11.5	170	22	47	13	12	.4	1.9	180
NOV											
05...	1220	417	8.0	130	18	35	10	9.9	.4	.9	130
DEC											
02...	0815	489	2.5	140	25	38	11	9.9	.4	1.4	140
JAN											
06...	0930	A270	.0	160	29	41	13	11	.4	1.2	160
FEB											
04...	0950	83	.0	180	32	49	14	14	.5	1.4	180
MAR											
09...	1645	295	5.5	160	35	43	13	13	.4	1.4	140
APR											
15...	1330	676	8.0	110	12	30	9.1	11	.5	1.2	120
MAY											
06...	1155	1320	8.0	100	2	29	7.8	11	.5	1.2	120
JUN											
04...	1315	6300	8.5	39	0	11	2.7	4.7	.3	.9	52
JUL											
07...	1300	5380	13.0	32	0	8.4	2.5	2.3	.2	.5	43
AUG											
03...	1120	1880	14.5	59	2	16	4.6	5.9	.3	2.3	69
SEP											
08...	1150	401	12.0	130	10	35	10	9.4	.4	1.2	140

A Daily mean discharge.

DATE	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	DISSOLVED NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)
OCT											
01...	0	148	43	1.8	.2	9.9	218	.30	95.4	.18	.00
NOV											
05...	3	112	28	1.8	.2	9.3	164	.22	185	.02	.04
DEC											
02...	0	115	42	2.1	.2	8.1	184	.25	243	.05	.03
JAN											
06...	0	131	46	1.7	.2	11	203	.28	148	.18	.02
FEB											
04...	0	148	55	3.5	.3	10	235	.32	52.7	.14	.02
MAR											
09...	6	125	63	1.7	.2	9.2	220	.30	175	.05	.02
APR											
15...	0	98	35	1.8	.2	12	158	.21	288	.05	.07
MAY											
06...	0	98	31	1.8	.1	12	151	.21	538	.07	.18
JUN											
04...	0	43	5.8	.0	.1	8.0	60	.08	1020	.05	.27
JUL											
07...	0	35	.0	1.9	.1	6.5	44	.06	639	.05	.11
AUG											
03...	0	57	13	.0	.1	6.5	86	.12	437	.79	.07
SEP											
08...	3	120	28	.0	.2	7.0	162	.22	175	.14	.00

06207510 BIG SAND COULEE AT WYOMING-MONTANA STATE LINE

LOCATION.--Lat 45°00'17", long 109°03'29", in SE¼NE¼SW¼ sec.32, T.9 S., R.22 E., Carbon County, MT., Hydrologic Unit 10070006, on right bank 0.3 mi (0.5 km) north of Wyoming-Montana State line and 0.5 mi (0.8 km) upstream from mouth.

DRAINAGE AREA.--134 mi^2 (347 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1973 to current year (no winter records).

GAGE.--Water-stage recorder. Altitude of gage is 4,000 ft (1,219 m), from topographic map.

REMARKS.--Water-discharge records good. Natural flow of stream affected by transbasin diversions and return flow from irrigated areas.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 365 ft^3/s (10.3 m^3/s) Sept. 9, 1973, gage height 4.75 ft (1.448 m), from rating curve extended above 100 ft^3/s (2.83 m^3/s) on basis of slope-area measurement of peak flow; minimum daily during periods of operation, 1.2 ft^3/s (0.034 m^3/s) Apr. 18, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 152 ft^3/s (4.30 m^3/s) July 26, gage height, 3.75 ft (1.143 m); minimum daily during period of operation, 1.6 ft^3/s (0.045 m^3/s) Apr. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75					2.3	1.9	5.0	47	87	77	63
2	72					2.2	2.0	5.3	55	91	90	52
3	72					2.2	2.1	18	64	91	84	50
4	75					2.1	2.1	20	67	93	101	48
5	70					2.0	2.1	33	61	91	108	50
6	70					2.0	2.2	58	50	77	107	53
7	66					2.0	2.2	57	56	64	112	52
8	71					2.0	2.2	62	62	61	107	56
9	66					1.9	2.2	86	69	57	100	60
10	69					1.9	2.2	82	73	62	89	55
11	72					1.8	2.1	78	80	65	80	50
12	78					2.2	2.1	75	81	60	80	53
13	106					2.3	2.0	75	81	48	72	56
14	104					2.2	2.0	80	90	49	73	56
15	100					2.3	1.7	87	110	48	72	58
16	101					2.4	1.6	85	103	54	75	60
17	93					9.3	1.8	64	107	62	71	60
18	90					17	1.8	51	97	69	66	67
19	97					4.5	1.7	53	101	67	65	94
20	94					2.6	1.7	45	113	64	64	106
21	86					2.5	2.4	33	119	60	65	97
22	100					2.3	2.3	33	103	53	66	94
23	101					2.3	2.0	41	90	55	69	93
24	84					2.2	1.9	39	77	61	72	107
25	78					2.2	1.8	43	67	76	78	110
26	90					2.1	2.0	41	64	82	81	110
27	97					2.0	3.7	38	62	81	82	108
28	98					2.0	12	44	71	77	90	106
29	96					2.0	13	48	76	69	90	107
30	94					2.0	9.7	48	87	66	84	107
31	96					2.0	---	50	---	67	67	---
TOTAL	2661					90.8	90.5	1577.3	2383	2107	2537	2238
MEAN	85.8					2.93	3.02	50.9	79.4	68.0	81.8	74.6
MAX	106					17	13	87	119	93	112	110
MIN	66					1.8	1.6	5.0	47	48	64	48
AC-FT	5280					180	180	3130	4730	4180	5030	4440

06207510 BIG SAND COULEE AT WYOMING-MONTANA STATE LINE--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1973 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: May to October 1973, March to October 1974, March to October 1975, March to September 1976.
SUSPENDED SEDIMENT DISCHARGE: May to October 1973, March to October 1974, March to October 1975, March to September 1976.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 24.0°C July 5, 6, 11, 1973, July 19, 1974; minimum, 5.0°C Mar. 6, 27, 1975, Mar. 11, 1976.
SEDIMENT CONCENTRATIONS: Maximum daily, 37,200 mg/L May 8, 1975; minimum daily, 2 mg/L Mar. 3, 7, 1976.
SEDIMENT LOADS: Maximum daily, 11,600 tons (10,500 tonnes) Oct. 31, 1974; minimum daily, 0.01 ton (0.01 tonne) Mar. 3, 7, 1976.

EXTREMES FOR PERIOD OCTOBER 1975, MARCH TO SEPTEMBER 1976.--
WATER TEMPERATURES: Maximum, 23.0°C July 24; minimum, 5.0°C Mar. 11.
SEDIMENT CONCENTRATIONS: Maximum daily, 13,900 mg/L Apr. 29, minimum daily, 2 mg/L Mar. 3, 7.
SEDIMENT LOADS: Maximum daily, 965 tons (875 tonnes) June 15; minimum daily, 0.01 ton (0.01 tonne) Mar. 3, 7.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE (DEG C)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
JUL								
07...	1100	73	160	17.0	61	0	18	3.8
AUG								
03...	1040	81	220	15.5	--	--	--	--
SEP								
08...	1040	58	300	11.5	140	10	38	10

DATE	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
JUL									
07...	9.1	.5	1.0	92	75	15	1.1	.1	6.4
AUG									
03...	--	--	--	--	--	--	--	--	--
SEP									
08...	16	.6	2.1	154	126	37	2.0	.2	8.6

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)
JUL								
07...	101	.14	19.9	.05	.18	.27	.32	.06
AUG								
03...	--	--	--	--	--	--	--	--
SEP								
08...	192	.26	30.1	.53	.48	.21	.74	.08

06207510 BIG SAND COULEE AT WYOMING-MONTANA STATE LINE--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.0					8.0	14.0	16.0	15.0	20.0	16.0	19.0
2	16.0					7.0	12.0	11.0	17.0	18.0	19.0	20.0
3	15.0					6.0	11.0	15.0	16.0	18.0	14.5	18.0
4	15.0					8.0	12.0	12.0	17.0	19.0	21.0	18.0
5	17.0					9.0	14.0	13.0	17.0	20.0	18.0	19.0
6	16.0					11.0	15.0	12.0	17.0	19.0	16.0	18.0
7	11.0					10.0	17.0	9.0	16.0	19.0	18.0	12.0
8	10.0					8.0	16.0	15.0	18.0	19.0	19.0	14.0
9	12.0					9.0	15.0	14.0	19.0	20.0	19.0	15.0
10	12.0					12.0	16.0	7.0	17.0	20.0	19.0	18.0
11	12.0					5.0	18.0	12.0	14.0	20.0	18.0	14.0
12	11.0					6.0	19.0	14.0	15.0	18.0	19.0	17.0
13	9.0					11.0	17.0	15.0	11.0	18.0	20.0	16.0
14	9.0					9.0	17.0	18.0	9.0	18.0	19.0	16.0
15	9.0					11.0	15.0	12.0	12.0	17.0	17.0	18.0
16	12.0					14.0	9.0	13.0	11.0	22.0	18.0	16.0
17	12.0					9.0	12.0	18.0	11.0	20.0	18.0	18.0
18	10.0					8.0	16.0	17.0	15.0	21.0	20.0	17.0
19	13.0					6.0	15.0	16.0	16.0	19.0	20.0	12.0
20	15.0					9.0	14.0	16.0	17.0	18.0	20.0	16.0
21	10.0					9.0	15.0	17.0	17.0	20.0	21.0	17.0
22	6.0					10.0	16.0	17.0	16.0	19.0	20.0	16.0
23	8.0					11.0	12.0	17.0	16.0	20.0	18.0	17.0
24	7.0					10.0	17.0	18.0	14.0	23.0	19.0	16.0
25	11.0					11.0	18.0	14.0	12.0	21.0	20.0	14.0
26	9.0					12.0	9.0	14.0	12.0	20.0	19.0	15.0
27	8.0					13.0	8.0	15.0	15.0	20.0	18.0	16.0
28	7.0					11.0	7.0	17.0	16.0	20.0	19.0	14.0
29	9.0					12.0	9.0	14.0	18.0	19.0	20.0	15.0
30	9.0					14.0	17.0	12.0	19.0	18.0	18.0	15.0
31	10.0					15.0	---	14.0	---	20.0	18.0	---
MONTH	11.0					10.0	14.0	14.5	15.0	19.5	18.5	16.0

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM
MAR 18...	1510	3.0	17	6880	316	90	99	100

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM
JUN 04...	1200	71	13.0	4	8	42	58

DATE	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM
JUN 04...	59	61	64	70	78	100

06207510 BIG SAND COULEE AT WYOMING-MONTANA STATE LINE--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	75	55	11						
2	72	56	11						
3	72	60	12						
4	75	49	9.9						
5	70	45	8.5						
6	70	58	11						
7	66	50	8.9						
8	71	54	10						
9	66	48	8.6						
10	69	42	7.8						
11	72	42	8.2						
12	78	1360	286						
13	106	1950	558						
14	104	1490	418						
15	100	1230	332						
16	101	380	104						
17	93	132	33						
18	90	47	11						
19	97	55	14						
20	94	51	13						
21	86	42	9.8						
22	100	64	17						
23	101	73	20						
24	84	78	18						
25	78	58	12						
26	90	196	48						
27	97	560	147						
28	98	560	148						
29	96	260	67						
30	94	263	67						
31	96	281	73						
TOTAL	2661	---	2502.7						

	JANUARY	FEBRUARY	MARCH	
1		2.3	14	.09
2		2.2	4	.02
3		2.2	2	.01
4		2.1	3	.02
5		2.0	4	.02
6		2.0	3	.02
7		2.0	2	.01
8		2.0	10	.05
9		1.9	12	.06
10		1.9	8	.04
11		1.8	53	.26
12		2.2	70	.42
13		2.3	64	.40
14		2.2	15	.09
15		2.3	8	.05
16		2.4	13	.08
17		9.3	1950	159
18		17	5080	233
19		4.5	2480	30
20		2.6	1820	13
21		2.5	350	2.4
22		2.3	295	1.8
23		2.3	215	1.3
24		2.2	182	1.1
25		2.2	270	1.6
26		2.1	196	1.1
27		2.0	162	.87
28		2.0	48	.26
29		2.0	62	.33
30		2.0	30	.16
31		2.0	57	.31
TOTAL		90.8	---	447.87

06207510 BIG SAND COULEE AT WYOMING-MONTANA STATE LINE--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	1.9	49	.25	5.0	8960	121	47	395	50
2	2.0	42	.23	5.3	2500	36	55	120	18
3	2.1	30	.17	18	1620	79	64	126	22
4	2.1	16	.09	20	850	46	67	162	31
5	2.1	24	.14	33	1030	112	61	99	16
6	2.2	31	.18	58	1020	160	50	120	16
7	2.2	25	.15	57	480	74	56	167	25
8	2.2	13	.08	62	440	74	62	150	25
9	2.2	9	.05	86	740	172	69	181	34
10	2.2	12	.07	82	490	108	73	142	28
11	2.1	12	.07	78	360	76	80	171	37
12	2.1	15	.09	75	360	73	81	104	23
13	2.0	13	.07	75	210	43	81	96	21
14	2.0	12	.06	80	362	78	90	603	147
15	1.7	11	.05	87	473	111	110	3250	965
16	1.6	17	.07	85	196	45	103	450	125
17	1.8	32	.16	64	150	26	107	129	37
18	1.8	8	.04	51	192	26	97	114	30
19	1.7	10	.05	53	250	36	101	99	27
20	1.7	14	.06	45	178	22	113	112	34
21	2.4	75	.49	33	162	14	119	158	51
22	2.3	168	1.0	33	122	11	103	150	42
23	2.0	92	.50	41	137	15	90	115	28
24	1.9	48	.25	39	112	12	77	401	83
25	1.8	42	.20	43	131	15	67	425	77
26	2.0	28	.15	41	82	9.1	64	128	22
27	3.7	520	5.2	38	113	12	62	80	13
28	12	9040	327	44	199	24	71	80	15
29	13	13900	488	48	183	24	76	69	14
30	9.7	11800	309	48	166	22	87	69	16
31	---	---	---	50	442	60	---	---	---
TOTAL	90.5	---	1133.92	1577.3	---	1736.1	2383	---	2072
		JULY			AUGUST			SEPTEMBER	
1	87	110	26	77	86	18	63	85	14
2	91	170	42	90	122	30	52	32	4.5
3	91	60	15	84	156	35	50	23	3.1
4	93	60	15	101	229	62	48	23	3.0
5	91	73	18	108	422	123	50	29	3.9
6	77	96	20	107	120	35	53	29	4.1
7	64	109	21	112	129	39	52	20	2.8
8	61	91	15	107	106	31	56	78	12
9	57	98	15	100	61	16	60	107	17
10	62	129	22	89	59	14	55	97	14
11	65	106	19	80	68	15	50	52	7.0
12	60	161	26	80	72	16	53	56	8.0
13	48	118	15	72	64	12	56	144	22
14	49	105	14	73	48	9.5	56	138	21
15	48	102	13	72	53	10	58	96	15
16	54	89	13	75	43	8.7	60	88	14
17	62	116	19	71	47	9.0	60	73	12
18	69	135	25	66	64	11	67	89	16
19	67	90	16	65	78	14	94	357	98
20	64	81	14	64	71	12	106	222	64
21	60	80	13	65	46	8.1	97	81	21
22	53	102	15	66	69	12	94	64	16
23	55	60	8.9	69	86	16	93	57	14
24	61	105	17	72	62	12	107	72	21
25	76	151	31	78	73	15	110	88	26
26	82	626	160	81	50	11	110	91	27
27	81	430	94	82	31	6.9	108	56	16
28	77	150	31	90	33	8.0	106	51	15
29	69	76	14	90	44	11	107	47	14
30	66	65	12	84	37	8.4	107	60	17
31	67	81	15	67	57	10	---	---	---
TOTAL	2107	---	793.9	2537	---	638.6	2238	---	542.4
YEAR	13684.6		9867.49						

06208800 CLARKS FORK YELLOWSTONE RIVER NEAR SILESIA, MT

LOCATION.--Lat 45°30'48", long 108°49'41", in NE¼SE¼ sec.1, T.4 S., R.23 E., Carbon County, Hydrologic Unit 10070006, on left bank 0.5 mi (0.8 km) downstream from Whitehorse Canal intake, 1 mi (2 km) upstream from Rock Creek, 3 mi (5 km) south of Silesia, and at mile 19 (31 km).

DRAINAGE AREA.--2,093 mi^2 (5,421 km^2).

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,410 ft (1,039 m), from topographic map.

REMARKS.--Records good except those for winter period, which are poor. Diversions for irrigation of about 42,600 acres (172 km^2), of which about 1,100 acres (4.45 km^2) lies below station. In addition about 9,000 acres (36.4 km^2) of land above station are irrigated by diversions from adjoining Rock Creek basin.

AVERAGE DISCHARGE.--7 years, 1,307 ft^3/s (37.01 m^3/s), 946,900 acre-ft/yr (1.17 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,800 ft^3/s (334 m^3/s) June 10, 1972, gage height, 7.51 ft (2.289 m); maximum gage height, 7.82 ft (2.384 m) July 6, 1975; minimum daily discharge, 140 ft^3/s (3.96 m^3/s) Dec. 4, 1972.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5,300 ft^3/s (150 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
June 10	1500	*7750	219	*6.27	1.911	July 2	1500	6940	197	5.93	1.807
June 22	1700	5900	167	5.46	1.664						

Minimum daily discharge, 230 ft^3/s (6.51 m^3/s) Mar 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	525	833	700	460	520	465	427	916	4810	5220	1920	471
2	519	619	850	440	500	300	482	993	4460	6400	2460	447
3	495	821	950	420	440	250	496	1180	4960	6270	2610	435
4	501	814	1090	410	320	230	478	1370	5650	5900	2250	447
5	483	609	1000	400	250	250	495	1490	6160	5770	2010	477
6	488	601	984	400	300	300	537	1360	6420	5440	1810	501
7	479	794	899	400	400	350	634	1390	6710	5400	1640	581
8	515	776	842	410	500	400	690	1560	6920	5400	1530	592
9	519	764	850	440	550	470	741	2030	7110	5120	1440	639
10	529	710	858	500	600	555	883	2290	7270	5080	1290	657
11	527	672	842	550	560	627	764	2680	7180	5120	1240	638
12	530	701	818	600	550	447	803	2870	6800	4790	1150	658
13	621	661	803	650	550	453	967	2460	5770	4380	1070	716
14	741	690	561	700	600	513	1050	2830	5650	3930	1010	676
15	788	690	520	650	630	465	883	3730	4610	3440	984	653
16	755	697	500	600	581	447	907	3490	3870	3060	924	620
17	743	705	460	570	525	543	993	3070	4030	2650	810	604
18	723	734	480	550	531	641	818	3600	3590	2820	756	650
19	732	705	510	550	549	690	741	4540	3330	2980	690	734
20	741	670	550	520	515	531	705	4810	3410	2950	690	1110
21	718	630	550	500	498	471	690	4730	4440	2730	655	976
22	807	550	550	500	454	453	690	4850	5460	2530	648	858
23	934	530	550	490	451	465	676	4880	5650	2400	641	825
24	912	510	550	470	486	483	697	4500	4940	2300	581	973
25	837	500	550	450	488	471	676	4350	4180	2250	568	981
26	814	460	550	450	501	462	658	4270	3630	2210	549	949
27	852	440	550	500	581	441	1130	3930	3140	2130	549	959
28	864	380	550	540	543	434	1100	4250	2990	2060	568	911
29	846	350	550	550	501	425	907	5000	3310	1940	561	866
30	825	400	550	550	---	413	924	5320	4180	1760	531	836
31	830	---	500	540	---	417	---	5260	---	1680	489	---
TOTAL	21193	19616	21067	15760	14474	13862	22842	99999	150650	116310	34624	21440
MEAN	684	654	680	508	499	447	761	3226	5022	3752	1117	715
MAX	934	833	1090	700	630	690	1130	5320	7270	6400	2610	1110
MIN	479	350	460	400	250	230	427	916	2990	1680	489	435
AC-FT	42040	38910	41790	31260	28710	27500	45310	198300	298800	230700	68680	42530

CAL YR 1975 TOTAL 516245 MEAN 1414 MAX 10100 MIN 180 AC-FT 1024000
WTR YR 1976 TOTAL 551837 MEAN 1508 MAX 7270 MIN 230 AC-FT 1095000

06209500 ROCK CREEK NEAR RED LODGE, MT

LOCATION.--Lat 45°07'15", long 109°17'45", in NW¼NW¼ sec.20, T.8 S., R.20 E., Carbon County, Hydrologic Unit 10070006, on left bank at downstream side of bridge, 3 mi (5 km) upstream from West Fork, and 4.5 mi (7.2 km) southwest of Red Lodge.

DRAINAGE AREA.--124 mi^2 (321 km^2).

PERIOD OF RECORD.--April to December 1932, May 1934 to current year. Monthly discharge only for May 1934, published in WSP 1309.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,100.52 ft (1,859.438 m) above mean sea level. Prior to Oct. 1, 1937, nonrecording gage at same site and datum.

REMARKS.--Records fair except those of winter period, which are poor. Flow partly regulated by Glacier Lake. No diversions above station.

AVERAGE DISCHARGE.--42 years, 176 ft^3/s (4.984 m^3/s), 127,500 acre-ft/yr (157 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,110 ft^3/s (88.1 m^3/s) June 4, 1957, gage height, 4.78 ft (1.457 m), from rating curve extended above 1,300 ft^3/s (36.8 m^3/s); maximum gage height observed, 4.80 ft (1.463 m) June 16, 1937; minimum discharge observed, 14 ft^3/s (0.40 m^3/s) Nov. 29, 1954, result of discharge measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 660 ft^3/s (18.7 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
June 7	2200	956	27.1	3.68	1.122	July 2	0100	*1010	28.6	*3.75	1.143
June 22	0100	877	24.8	3.60	1.097						

Minimum daily discharge, 25 ft^3/s (0.708 m^3/s) March 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	88	83	50	42	38	27	30	52	530	891	572	227
2	86	82	52	40	38	26	29	62	584	940	572	220
3	83	82	54	38	36	25	29	73	660	891	500	220
4	82	80	56	36	34	26	32	86	758	842	464	216
5	80	79	56	35	30	28	35	86	779	835	434	206
6	79	77	54	34	34	30	38	88	828	835	400	216
7	80	76	54	35	36	31	41	88	877	863	380	242
8	85	72	54	36	36	32	43	104	898	849	360	220
9	82	59	52	38	36	33	44	129	912	660	345	199
10	82	62	50	40	35	33	43	154	912	608	325	189
11	79	56	50	40	35	33	45	213	870	702	320	168
12	80	59	50	42	35	32	50	192	716	674	298	138
13	86	69	48	42	35	31	52	192	604	646	282	141
14	83	70	46	42	35	30	50	274	488	632	266	131
15	80	73	42	42	35	30	50	294	440	611	262	127
16	79	72	44	42	34	30	50	250	405	590	250	120
17	79	70	48	40	34	30	46	254	370	870	230	122
18	79	67	48	40	34	30	46	340	335	905	230	141
19	79	61	48	40	33	30	45	416	370	912	242	149
20	77	55	48	40	30	30	45	500	518	877	230	133
21	96	56	46	40	32	29	46	518	709	856	234	127
22	107	60	46	40	34	29	45	572	835	779	230	124
23	90	62	46	38	33	29	45	500	751	737	227	127
24	79	66	46	38	32	29	46	458	604	695	227	131
25	74	60	46	40	31	29	52	458	542	578	223	138
26	86	61	45	47	31	29	51	428	452	560	216	138
27	86	58	45	44	30	29	51	470	416	548	199	131
28	86	54	45	40	29	28	49	597	470	512	180	124
29	85	50	45	39	28	29	49	639	590	464	174	120
30	86	46	45	38	---	30	49	611	744	458	192	115
31	86	---	44	38	---	32	---	584	---	494	238	---
TOTAL	2589	1977	1503	1226	973	919	1326	9682	18907	22394	9302	4800
MEAN	83.5	65.9	48.5	39.5	33.6	29.6	44.2	312	632	722	300	160
MAX	107	83	56	47	38	33	52	639	912	940	572	242
MIN	74	46	42	34	28	25	29	52	335	458	174	115
AC-FT	5140	3920	2980	2430	1930	1820	2630	19200	37620	44420	18450	9520

CAL YR 1975 TOTAL 87031 MEAN 238 MAX 1700 MIN 22 AC-FT 172600
WTR YR 1976 TOTAL 75658 MEAN 207 MAX 940 MIN 25 AC-FT 150100

06211000 RED LODGE CREEK ABOVE COONEY RESERVOIR, NEAR BOYD, MT

LOCATION.--Lat 45°26'16", long 109°15'11", in SE¼SE¼ sec.33, T.4 S., R.20 E., Carbon County, Hydrologic Unit 10070006, on right bank 0.6 mi (1.0 km) upstream from Cooney Reservoir, 9 mi (14 km) west of Boyd.

DRAINAGE AREA.--143 mi^2 (370 km^2).

PERIOD OF RECORD.--May 1937 to current year (no winter records for most years).

REVISED RECORDS.--WSP 1729: Drainage area. WSP 2116: 1937(M), 1942(M), 1943(P), 1944(M), 1948(M), 1952(M), 1957(P), 1962(M), 1963(M).

GAGE.--Water-stage recorder. Datum of gage is 4,248.0 ft (1,294.79 m) above mean sea level.

REMARKS.--Records good. Some return flow from lands irrigated by water diverted from Rock Creek and East Rosebud Creek basins. Diversions for irrigation of about 5,100 acres (20.6 km^2) above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,260 ft^3/s (64.0 m^3/s) June 15, 1967, gage height, 7.00 ft (2.134 m), from rating curve extended above 1,200 ft^3/s (34.0 m^3/s) on basis of contracted-opening measurement of peak flow; no flow for many days in 1949.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,100 ft^3/s (31.2 m^3/s) May 1, gage height, 4.68 ft (1.426 m); minimum recorded, 18 ft^3/s (0.51 m^3/s) Aug. 28, gage height, 1.18 ft (0.360 m), but may have been less during winter period.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55						86	687	150	141	79	24
2	55						84	634	147	135	118	23
3	52						77	629	135	118	123	21
4	49						86	692	135	120	135	20
5	49						92	587	133	110	106	21
6	47						106	618	133	95	103	25
7	48						115	516	156	90	95	33
8	55						113	447	147	92	92	43
9	55						118	408	130	80	88	44
10	53						125	384	125	69	84	47
11	52						118	369	130	75	88	47
12	56						118	336	210	79	92	61
13	71						115	318	280	80	90	63
14	77						115	348	360	69	82	61
15	82						108	477	320	67	71	66
16	73						183	360	290	67	71	69
17	67						204	309	340	66	67	66
18	64						162	300	280	67	61	79
19	61						150	267	230	75	58	106
20	59						135	267	200	90	56	90
21	61						141	267	210	82	53	86
22	75						133	249	220	73	49	84
23	75						135	231	222	67	41	82
24	69						138	228	195	52	39	86
25	63						138	222	183	52	36	79
26	67						150	216	174	53	31	82
27	63						189	186	150	52	24	86
28	55						192	174	130	53	20	77
29	56						263	177	130	50	21	66
30	59						392	183	144	52	22	59
31	64						---	174	---	59	22	---
TOTAL	1887						4281	11260	5789	2430	2117	1796
MEAN	60.9						143	363	193	78.4	68.3	59.9
MAX	82						392	692	360	141	135	106
MIN	47						77	174	125	50	20	20
AC-FT	3740						8490	22330	11480	4820	4200	3560

06211500 WILLOW CREEK NEAR BOYD, MT

LOCATION.--Lat 45°25'20", long 109°13'47", in NE¼SW¼SW¼SW¼ sec.2, T.5 S., R.20 E., Carbon County, Hydrologic Unit 10070006, on left bank 0.5 mi (0.8 km) upstream from Cooney Reservoir and 8 mi (13 km) west of Boyd.

DRAINAGE AREA.--53.3 mi^2 (138 km^2).

PERIOD OF RECORD.--June 1937 to current year (no winter records for most years).

REVISED RECORDS.--WSP 1729: Drainage area. WSP 2116: 1957, 1962.

GAGE.--Water-stage recorder. Altitude of gage is 4,260 ft (1,300 m), from topographic map. Prior to Apr. 23, 1948, at site 0.5 mi (0.8 km) downstream at different datum.

REMARKS.--Records good. Diversions for irrigation of about 1,800 acres (7.28 km^2) above station. Some return flow from lands irrigated by water diverted from Rock Creek basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,720 ft^3/s (48.7 m^3/s) June 15, 1967, gage height, 7.08 ft (2.158 m); from rating curve extended above 400 ft^3/s (11.3 m^3/s) on basis of slope-area measurement of peak flow; maximum gage height, 7.24 ft (2.207 m) May 29, 1942 (backwater from Cooney Reservoir), site and datum then in use; no flow May 29, 30, 1969.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 150 ft^3/s (4.25 m^3/s) (revised) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 30	2230	*413	11.7	*4.44	1.353	June 17	2000	187	5.30	3.51	1.070
June 14	2200	174	4.93	3.46	1.055						

Minimum recorded daily, 6.5 ft^3/s (0.18 m^3/s) Mar. 30, but may have been less during winter period.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32						58	281	34	116	71	27
2	32						50	246	30	106	102	26
3	30						30	193	32	100	96	24
4	28						40	189	32	96	106	24
5	28						58	167	40	100	88	26
6	28						87	147	41	94	81	31
7	26						96	141	50	98	69	52
8	29						96	125	50	98	69	45
9	31						119	119	45	94	61	51
10	28						104	112	34	79	57	43
11	27						96	110	31	78	60	43
12	31						88	98	78	81	57	50
13	41						76	90	61	92	58	57
14	39						72	90	136	79	51	52
15	43						64	119	125	69	50	61
16	38						76	92	100	69	52	58
17	35						100	78	145	66	45	60
18	35						92	72	134	69	38	63
19	32						76	66	110	72	36	79
20	31						66	64	94	98	31	64
21	30						66	58	112	83	32	63
22	35						64	51	127	83	31	55
23	35						63	45	134	72	35	52
24	34						61	44	123	71	36	57
25	36						57	42	123	83	35	57
26	32						66	41	127	78	35	60
27	34						85	43	110	78	41	72
28	32						83	44	100	71	38	60
29	31						110	38	104	76	31	58
30	34						239	43	110	63	32	52
31	38						---	39	---	63	27	---
TOTAL	1015			---			2438	3087	2572	2575	1651	1522
MEAN	32.7			---			81.3	99.6	85.7	83.1	53.3	50.7
MAX	43			---			239	281	145	116	106	79
MIN	26			---			30	38	30	63	27	24
AC-FT	2010			---			4840	6120	5100	5110	3270	3020

06212500 RED LODGE CREEK BELOW COONEY RESERVOIR, NEAR BOYD, MT

LOCATION.--Lat 45°27'00", long 109°11'06", in N½NW¼ sec.31, T.4 S., R.21 E., Carbon County, Hydrologic Unit 10070006, on right bank 400 ft (122 m) upstream from Cottonwood Creek, 1 mi (2 km) downstream from Cooney Dam, and 6 mi (10 km) west of Boyd.

DRAINAGE AREA.--210 mi^2 (544 km^2).

PERIOD OF RECORD.--September 1937 to current year.

REVISED RECORDS.--WSP 1309: 1942(M), 1944(M). WSP 2116: 1957(M).

GAGE.--Water-stage recorder. Altitude of gage is 4,140 ft (1,260 m), from topographic map.

REMARKS.--Records good except those for period of no gage height record (Nov. 21 to Jan. 14, May 23 to May 28), which are fair. Some return flow from lands irrigated by water diverted from Rock Creek and East Rosebud Creek basins. Flow completely regulated by Cooney Reservoir (see p.582). Diversions for irrigation of about 6,900 acres (27.9 km^2) above station.

AVERAGE DISCHARGE.--39 years, 102 ft^3/s (2.889 m^3/s), 73,900 acre-ft/yr (91.1 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,470 ft^3/s (98.3 m^3/s) June 15, 1967, gage height, 10.17 ft (3.100 m); no flow Oct. 6, 7, 1948, Oct. 7, 8, 12, 16, 17, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 518 ft^3/s (14.7 m^3/s) Apr. 30, gage height, 4.45 ft (1.356 m); no flow Oct. 7, 8, 12, 16, 17, when gates at Cooney Dam were closed.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	129	146	90	70	71	49	184	400	123	223	111	198
2	67	129	90	70	71	45	184	380	125	224	118	212
3	67	96	90	70	71	40	183	371	142	224	111	210
4	60	96	90	70	69	35	183	369	156	220	111	208
5	48	96	90	70	69	38	183	386	163	222	108	207
6	14	96	90	70	62	34	183	395	161	223	135	206
7	0	96	90	70	66	21	184	394	171	223	154	206
8	0	96	90	70	72	21	185	393	193	224	155	203
9	.92	95	90	70	71	21	184	390	195	224	168	201
10	1.7	95	90	70	71	31	184	426	195	225	177	200
11	.50	96	90	68	67	41	184	479	195	203	176	198
12	0	96	88	66	71	37	184	475	197	183	178	187
13	5.6	96	88	66	75	25	185	472	197	183	163	160
14	4.1	71	82	66	75	43	185	476	231	152	155	157
15	2.3	82	78	65	73	72	142	482	256	161	156	153
16	0	82	70	67	71	74	120	477	252	145	166	141
17	0	83	70	73	71	105	124	469	256	144	174	134
18	83	83	70	73	69	142	121	465	253	142	174	135
19	159	83	70	71	69	127	121	464	250	142	176	134
20	157	85	70	69	69	134	121	461	247	141	175	133
21	146	86	70	71	60	149	121	456	246	148	174	133
22	127	86	70	69	51	150	122	454	246	154	181	133
23	136	86	70	69	48	152	164	450	267	153	223	133
24	150	86	70	69	48	150	197	450	311	142	222	134
25	150	86	70	69	49	150	197	450	308	134	224	134
26	150	88	70	69	53	170	224	450	309	129	223	135
27	150	90	70	69	57	186	266	450	305	124	222	142
28	148	90	70	69	51	185	296	350	304	124	220	143
29	148	90	70	69	49	185	325	145	272	112	221	142
30	148	90	70	69	---	183	381	134	222	107	221	140
31	148	---	70	71	---	185	---	124	---	106	208	---
TOTAL	2400.12	2776	2446	2147	1869	2980	5617	12537	6740	5261	5380	4952
MEAN	77.4	92.5	78.9	69.3	64.4	96.1	187	404	225	170	174	165
MAX	159	146	90	73	75	186	381	482	311	225	224	212
MIN	0	71	70	65	48	21	120	124	123	106	108	133
AC-FT	4760	5510	4850	4260	3710	5910	11140	24870	13380	10440	10670	9820

CAL YR 1975 TOTAL 81854.12 MEAN 224 MAX 1830 MIN 0 AC-FT 162400
WTR YR 1976 TOTAL 55113.12 MEAN 151 MAX 482 MIN 0 AC-FT 109300

06214500 YELLOWSTONE RIVER AT BILLINGS, MT

LOCATION.--Lat 45°47'48", long 108°28'12", in NE¼NE¼ sec.34, T.1 N., R.26 E., Yellowstone County, Hydrologic Unit 10070007, on left bank 30 ft (9 m) downstream from bridge on U.S. Highway 87, 1 mi (2 km) northeast of Billings, 10 mi (16 km) upstream from Pryor Creek, and at mile 346.0 (556.7 km).

DRAINAGE AREA.--11,795 mi^2 (30,549 km^2). Area at site used Jan. 10, 1963, to Dec. 2, 1967, 11,783 mi^2 (30,518 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1904 to December 1905 (gage heights only January to March, December 1905), August 1928 to current year. Monthly discharge only for some periods, published in WSP 1309. Published as "near Billings" 1904-5.

REVISED RECORDS.--WRD Mont. 1968: 1967 (M). WSP 1729: Drainage area.

GAGE.--Water-state recorder. Datum of gage is 3,081.36 ft (939.199 m) above mean sea level. May 1904 to December 1905, nonrecording gage at bridge 30 ft (9 m) upstream at different datum. Aug. 24, 1928, to June 30, 1932, nonrecording gage at bridge 30 ft (9 m) upstream at datum 2.0 ft (0.61 m) higher. July 1, 1932, to Oct. 12, 1937, water-stage recorder at old diversion dam 3 mi (5 km) upstream at different datum. Oct. 13, 1937, to Jan. 9, 1963, water-stage recorder at present site at datum 2.0 ft (0.61 m) higher. Jan. 10, 1963, to Dec. 2, 1967, water-stage recorder at city of Billings Water Department intake, 1.8 mi (2.9 km) upstream at datum 3,096.09 ft (943.688 m) above mean sea level.

REMARKS.--Water-discharge records good except those for winter period, which are fair. Diversions for irrigation of about 350,000 acres (1,420 km^2) above station.

AVERAGE DISCHARGE.--48 years (1928-76), 7,046 ft^3/s (199.5 m^3/s), 5,105,000 acre-ft/yr (6.29 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 69,500 ft^3/s (1,970 m^3/s) June 19, 1974, gage height, 14.60 ft (4.450 m); maximum gage height, 14.76 ft (4.499 m) June 16, 1967, present datum, from floodmark; minimum discharge, 430 ft^3/s (12.2 m^3/s) Dec. 12, 1932.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 39,900 ft^3/s (1,130 m^3/s) June 12, gage height, 10.56 ft (3.219 m); minimum daily, 1,900 ft^3/s (53.8 m^3/s) Feb. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4590	5810	3700	3000	3870	3100	3220	8240	31700	26600	11200	4590
2	4500	5780	4100	2700	3840	2800	3540	10100	28600	31200	14700	4500
3	4400	5570	5350	2500	3650	2400	3670	10900	29700	31700	17700	4350
4	4370	5510	6120	2400	2700	2200	3520	12200	33200	29200	15000	4300
5	4270	5480	6210	2300	2100	2300	3480	14300	35700	27700	13300	4320
6	4170	5390	5630	2200	2000	2700	3650	16100	37300	26700	12600	4300
7	4170	5270	5360	2200	1900	3340	4040	16100	38700	26400	11800	4690
8	4300	5160	5250	2300	2200	3620	4400	15000	38000	26100	11100	4820
9	4500	5160	5130	2400	3670	3820	4720	15800	38700	28300	10500	5050
10	4570	4870	5100	2600	4370	3790	5220	17800	38900	24700	9770	5020
11	4570	4720	5220	3500	4250	4040	5570	18900	39000	24500	9340	4900
12	4500	4720	5100	3600	4420	3620	5450	21600	38300	23400	8740	4900
13	5020	4640	4870	3600	4500	3120	5750	20100	33900	22500	8380	5020
14	5360	4740	4500	3620	4320	3400	6530	19300	35000	21600	7990	5630
15	5420	4770	3700	3580	4090	3220	6750	24900	30600	19400	7790	5360
16	5330	4820	3200	4520	3740	3240	6650	26600	26000	17700	7500	4900
17	5100	4970	3900	5330	3560	3460	6870	23400	27000	16500	6960	4790
18	5000	5270	2700	5600	3500	4120	6150	23400	26600	15800	6750	4870
19	4970	5050	3200	5130	3320	4950	5660	28500	24900	16900	6470	5540
20	5050	4570	3940	4520	3260	4790	5300	32800	24800	17100	6350	5940
21	5300	4020	4170	4220	3260	4040	5160	32200	29100	16000	6260	6350
22	6260	3700	4270	4040	3180	3620	5000	32800	34300	14800	6060	5780
23	6840	3900	3970	4040	3240	3520	4900	33100	35400	14100	5880	5420
24	6590	4000	4090	3940	3280	3560	5070	32600	32500	13500	5660	5690
25	6000	4200	4350	3720	3300	3620	5020	30900	28300	13100	5630	6260
26	5570	4200	4640	3300	3320	3500	5810	30400	25500	12700	5570	6210
27	5940	4100	4590	3060	3480	3440	7050	28200	23100	12300	5360	6260
28	6000	4100	4300	3940	3540	3340	7050	28100	21500	11600	5390	5940
29	5850	4000	3990	4040	3400	3280	6350	31800	21300	11100	5190	5630
30	5750	3500	4300	4120	---	3180	6930	34500	23400	10500	4970	5480
31	5780	---	4020	3970	---	3140	---	33700	---	10400	4770	---
TOTAL	160040	141990	137970	109990	99260	106270	158480	724340	931000	611100	264680	156810
MEAN	5163	4733	4451	3548	3423	3428	5283	23370	31030	19710	8538	5227
MAX	6840	5810	6210	5600	4500	4950	7050	34500	39000	31700	17700	6350
MIN	4170	3500	2700	2200	1900	2200	3220	8240	21300	10400	4770	4300
AC-FT	317400	281600	273700	218200	196900	210800	314300	1437000	1847000	1212000	525000	311000

CAL YR 1975 TOTAL 3870330 MEAN 10600 MAX 67100 MIN 1200 AC-FT 7677000
WTR YR 1976 TOTAL 3601930 MEAN 9841 MAX 39000 MIN 1900 AC-FT 7144000

06214500 YELLOWSTONE RIVER AT BILLINGS, MT--Continued
(National Stream Quality Accounting Network and radiochemical station)

WATER-QUALITY RECORDS

LOCATION.--Samples for NASQAN station collected at "south" bridge on Billings Boulevard, 5.9 mi (9.5 km) upstream from gaging station. Samples for daily specific conductance collected at Billings Water Department Intake, 1.8 mi (2.9 km) upstream from gaging station.
PERIOD OF RECORD.--Water years 1950-58, 1963 to current year.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1964 to current year.
WATER TEMPERATURES: July 1963 to current year.
INSTRUMENTATION.--Temperature recorder December 1967-December 1968, March 1969-September 1975.
REMARKS.--Water temperatures taken at highway bridge December 1950 to September 1958, at water department intake July 1963 to September 1968 and October 1970 to current year, at both sites October 1968 to September 1970. Flow affected by diversions for irrigation upstream from station.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,210 micromhos Feb. 2, 1951; minimum daily, 111 micromhos June 9, 1973.
WATER TEMPERATURES: Maximum daily, 26.5°C July 24, 1955; minimum daily, 0.0°C on many days during winter periods.
EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 650 micromhos Feb. 8; minimum daily, 128 micromhos June 11.
WATER TEMPERATURES: Maximum daily, 20.0°C July 24, 26; minimum daily, 0.0°C on many days during December to February.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	FECAL COLIFORM (COL. PER 100 ML)	FECAL STREPTOCOCCI KF AGAR (COL. PER 100 ML)
OCT											
07...	1100	4170	375	8.6	10.0	11.5	7	9.6	98	200	27
NOV											
19...	0915	5100	412	8.0	-9.0	1.0	1	12.0	94	300	--
DEC											
09...	0915	5160	455	8.0	9.0	4.0	10	11.4	97	240	130
JAN											
19...	1600	4920	407	8.0	3.0	1.0	10	13.2	104	22	1200
FEB											
11...	1030	4140	449	8.0	7.5	1.0	3	12.7	100	26	58
MAR											
10...	1015	3840	510	7.6	20.0	1.5	15	12.4	98	24	71
APR											
15...	1100	6810	335	8.0	14.0	12.5	30	10.4	108	100	70
MAY											
12...	0945	21700	244	8.0	16.0	11.0	140	9.6	97	480	310
JUN											
29...	1030	21100	200	7.9	26.0	16.0	15	8.0	90	100	82
JUL											
14...	1000	21500	185	8.2	22.0	17.5	15	8.3	97	540	200
AUG											
12...	0930	8740	311	8.0	22.0	18.5	10	8.0	95	290	310
SEP											
15...	0945	5390	395	8.2	16.0	14.0	4	8.4	90	280	80

DATE	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)
OCT											
07...	160	21	39	14	28	1.0	3.3	164	0	.7	85
NOV											
19...	150	22	39	13	26	.9	2.9	157	0	2.5	82
DEC											
09...	150	20	36	15	28	1.0	2.9	160	0	2.6	75
JAN											
19...	160	27	39	14	29	1.0	3.4	156	0	2.5	92
FEB											
11...	170	26	43	14	31	1.1	3.5	169	0	2.7	88
MAR											
10...	170	34	42	15	33	1.1	3.4	162	0	6.5	100
APR											
15...	130	11	32	11	22	.9	2.9	139	0	2.2	54
MAY											
12...	99	0	26	8.2	15	.7	6.9	125	0	2.0	34
JUN											
29...	74	8	20	5.8	11	.6	1.7	80	0	1.6	21
JUL											
14...	66	4	17	5.7	11	.6	1.7	76	0	.8	24
AUG											
12...	110	10	28	9.6	17	.7	2.3	121	0	1.9	49
SEP											
15...	140	20	35	12	23	.9	3.2	142	0	1.4	61

06214500 YELLOWSTONE RIVER AT BILLINGS, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT											
07...	6.8	.5	13	267	.36	3010	.09	.36	.45	.02	3.6
NOV											
19...	6.1	.4	13	266	.36	3660	.14	.46	.60	.00	--
DEC											
09...	6.5	.5	14	279	.38	3890	.29	.30	.59	.02	--
JAN											
19...	6.9	.4	13	260	.35	3450	.40	1.8	2.2	.03	4.2
FEB											
11...	8.2	.5	15	302	.41	3380	.40	.29	.69	.01	--
MAR											
10...	7.6	.5	14	308	.42	3190	.30	.49	.79	.04	--
APR											
15...	5.0	.4	13	217	.30	3990	.26	.81	1.1	.28	9.2
MAY											
12...	7.1	.4	12	174	.24	10200	.31	1.5	1.8	.51	--
JUN											
29...	3.3	.3	14	127	.17	7240	.08	.13	.21	.08	--
JUL											
14...	3.1	.3	11	126	.17	7310	.09	.02	.11	.04	3.7
AUG											
12...	4.7	.4	12	170	.23	4010	.09	.12	.21	.04	--
SEP											
15...	5.7	.5	12	236	.32	3430	.01	.26	.27	.04	--

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
OCT												
07...	1100	15	13	0	0	10	10	<50	0	0	2	550
JAN												
19...	1600	5	5	<10	0	0	0	<50	1	10	1	310
APR												
15...	1100	18	8	<10	1	0	0	<50	0	20	1	2700
JUL												
14...	1000	--	10	<10	2	0	10	<50	0	20	4	2000

DATE	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT											
07...	0	100	6	10	10	.1	.1	0	0	10	10
JAN											
19...	20	<100	2	20	0	.2	.0	1	0	30	0
APR											
15...	20	<100	2	110	10	.0	.0	1	0	30	10
JUL											
14...	60	200	14	60	10	.0	.0	0	0	40	30

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TOTAL ATRA-ZINE (UG/L)	ATRA-ZINE IN BOTTOM MATERI-AL (UG/KG DRY SOLIDS)	TOTAL ALDRIN (UG/L)	ALDRIN IN BOTTOM MA-TERIAL (UG/KG)	TOTAL CHLOR-DANE (UG/L)	CHLOR-DANE IN BOTTOM MA-TERIAL (UG/KG)	TOTAL DDD (UG/L)	DDD IN BOTTOM MA-TERIAL (UG/KG)	TOTAL DDE (UG/L)
NOV										
19...	0915	ND	--	ND	ND	ND	8	ND	ND	ND
FEB										
11...	1030	ND	--	ND	--	ND	--	ND	--	ND
JUN										
29...	1030	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG										
12...	0930	ND	--	ND	--	ND	--	ND	--	ND

06214500 YELLOWSTONE RIVER AT BILLINGS, MT--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	P,P' DDE IN BOTTOM MATERIAL (UG/KG)	DDE IN BOTTOM MATERIAL (UG/KG)	TOTAL DDT (UG/L)	DDT IN BOTTOM MATERIAL (UG/KG)	TOTAL DIAZINON (UG/L)	DIAZINON IN BOTTOM MATERIAL (UG/KG)	TOTAL DIELDRIN (UG/L)	DIELDRIN IN BOTTOM MATERIAL (UG/KG)	TOTAL ENDRIN (UG/L)	ENDRIN IN BOTTOM MATERIAL (UG/KG)
NOV										
19...	1.1	--	ND	ND	ND	ND	ND	.1	ND	ND
FEB										
11...	--	--	ND	--	ND	--	ND	--	ND	--
JUN										
29...	--	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG										
12...	--	--	ND	--	ND	--	ND	--	ND	--

DATE	TOTAL ETHION (UG/L)	ETHION IN BOTTOM MATERIAL (UG/KG)	TOTAL HEPTACHLOR (UG/L)	HEPTACHLOR IN BOTTOM MATERIAL (UG/KG)	TOTAL HEPTACHLOR EPOXIDE (UG/L)	HEPTACHLOR EPOXIDE IN BOTTOM MATERIAL (UG/KG)	TOTAL LINDANE (UG/L)	LINDANE IN BOTTOM MATERIAL (UG/KG)	TOTAL MALATHION (UG/L)	MALATHION IN BOTTOM MATERIAL (UG/KG)
NOV										
19...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB										
11...	ND	--	ND	--	ND	--	ND	--	ND	--
JUN										
29...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG										
12...	ND	--	ND	--	ND	--	ND	--	ND	--

DATE	TOTAL METHOXYCHLOR (UG/L)	METHOXYCHLOR IN BOTTOM MATERIAL (UG/KG)	TOTAL METHYL PARATHION (UG/L)	METHYL PARATHION IN BOTTOM MATERIAL (UG/KG)	TOTAL METHYL TRITHION (UG/L)	METHYL TRITHION IN BOTTOM MATERIAL (UG/KG)	TOTAL PARATHION (UG/L)	PARATHION IN BOTTOM MATERIAL (UG/KG)	TOTAL TOXAPHENE (UG/L)	TOXAPHENE IN BOTTOM MATERIAL (UG/KG)
NOV										
19...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB										
11...	ND	--	ND	--	ND	--	ND	--	ND	--
JUN										
29...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG										
12...	ND	--	ND	--	ND	--	ND	--	ND	--

DATE	TOTAL TRITHION (UG/L)	TRITHION IN BOTTOM MATERIAL (UG/KG)	SIMAZINE IN BOTTOM MATERIAL (UG/KG DRY SOLIDS)	TOTAL 2,4-D (UG/L)	2,4-D IN BOTTOM MATERIAL (UG/KG)	TOTAL 2,4,5-T (UG/L)	2,4,5-T IN BOTTOM MATERIAL (UG/KG)	TOTAL SILVEX (UG/L)	SILVEX IN BOTTOM MATERIAL (UG/KG)
NOV									
19...	ND	ND	--	ND	--	ND	--	ND	--
FEB									
11...	ND	--	--	ND	--	ND	--	ND	--
JUN									
29...	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG									
12...	ND	--	--	ND	--	ND	--	ND	--

06214500 YELLOWSTONE RIVER AT BILLINGS, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	417	402	472	440	449	474	473	486	145	153	269	346
2	420	404	491	470	451	461	468	466	146	142	265	348
3	419	400	449	498	460	478	461	433	147	130	319	354
4	414	405	426	554	457	539	470	419	138	161	268	362
5	421	405	440	525	470	539	470	403	141	144	264	368
6	425	405	437	497	572	508	467	369	132	---	262	373
7	426	406	448	468	611	507	460	352	134	143	269	382
8	426	404	424	509	650	467	447	366	133	146	270	392
9	435	402	428	533	535	449	419	360	136	144	273	378
10	432	400	447	499	484	465	403	332	131	151	278	377
11	439	405	---	452	470	474	383	291	128	150	283	374
12	428	411	430	439	459	469	378	285	279	153	286	379
13	426	410	433	438	459	467	369	271	179	160	291	386
14	451	406	423	426	459	488	359	266	213	165	299	374
15	461	408	322	439	477	485	358	288	211	173	302	366
16	439	407	427	429	480	489	349	272	201	184	308	372
17	434	407	460	433	481	501	417	230	206	191	310	378
18	429	398	500	438	481	522	438	234	208	194	308	377
19	423	390	502	440	470	492	397	216	204	195	315	376
20	423	393	485	436	486	461	394	194	---	185	321	372
21	414	422	470	454	471	456	396	180	179	191	326	362
22	427	453	470	461	479	452	420	174	158	204	318	359
23	442	452	454	472	467	476	400	168	173	237	328	368
24	434	449	471	478	468	480	396	168	152	213	329	372
25	411	414	460	482	477	480	386	176	161	238	329	367
26	411	411	438	471	479	474	390	169	174	222	333	351
27	415	421	430	478	491	472	---	172	181	221	337	368
28	415	420	410	471	491	470	495	171	186	241	342	363
29	413	435	435	463	492	478	499	161	191	232	347	363
30	410	467	443	454	---	470	488	148	183	240	351	363
31	407	---	450	454	---	476	---	145	---	260	350	---
MONTH	425	414	446	468	489	481	422	270	171	185	305	369

YEAR MAX 650 MIN 128 MEAN 371

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.5	7.0	0.0	0.0	1.0	1.0	7.5	10.0	11.5	17.0	18.0	18.0
2	11.0	7.0	1.0	0.0	1.5	0.5	6.0	11.0	13.0	17.0	18.0	18.0
3	12.0	7.0	0.5	0.0	1.5	0.5	7.0	10.5	12.0	16.0	15.0	17.5
4	12.0	8.0	0.5	0.0	1.0	0.5	7.0	12.5	13.5	16.5	16.0	17.5
5	12.0	7.0	1.0	0.5	0.5	0.5	9.0	11.5	12.0	16.5	17.0	18.0
6	12.5	7.0	3.5	0.5	0.5	1.5	10.0	10.5	13.0	---	18.5	18.5
7	11.5	7.5	4.0	0.0	0.5	1.5	11.0	9.0	12.0	19.0	19.0	17.0
8	10.5	8.0	2.0	0.0	0.0	1.0	12.0	11.0	12.0	18.0	19.5	14.0
9	8.5	8.0	3.0	0.5	1.0	1.0	12.5	14.5	13.0	18.0	19.0	13.5
10	8.5	2.0	4.5	0.5	1.5	1.5	11.5	13.5	14.0	19.0	18.0	13.5
11	10.0	6.0	3.0	0.5	1.0	3.5	12.0	13.0	13.0	---	17.5	14.5
12	11.0	1.0	1.5	1.0	1.0	1.0	11.5	11.0	13.0	19.0	18.0	15.0
13	11.0	1.0	1.5	0.0	0.5	1.5	12.5	11.0	13.0	18.0	18.5	15.0
14	8.5	2.5	1.0	0.0	0.0	2.5	14.0	13.5	9.5	18.5	18.0	15.5
15	8.0	2.5	0.0	1.5	2.0	3.0	12.0	12.0	8.5	18.0	18.0	14.5
16	8.0	3.0	0.0	1.0	2.0	2.5	11.0	12.0	11.0	17.0	18.5	15.5
17	8.5	4.5	0.0	1.5	1.5	5.0	9.0	11.0	11.0	19.0	18.0	16.5
18	10.0	4.0	0.0	1.5	1.0	6.5	9.0	13.0	11.5	18.0	18.5	16.5
19	10.0	2.5	0.0	1.0	1.0	7.0	9.5	13.0	11.0	18.0	17.5	14.0
20	10.0	1.0	0.0	1.0	1.0	6.0	8.5	12.0	---	18.0	18.0	14.5
21	9.0	0.5	0.0	0.0	1.0	6.5	9.0	11.5	14.0	19.0	18.5	14.0
22	7.0	2.0	0.0	0.5	1.0	4.0	9.0	13.0	14.5	19.0	19.0	15.0
23	5.5	3.0	0.0	0.5	1.0	5.5	10.0	14.0	12.0	19.5	20.0	15.0
24	4.5	1.0	0.0	0.5	1.5	5.0	10.0	11.0	11.5	20.0	19.0	15.5
25	4.5	1.0	0.0	0.5	2.5	5.5	11.5	11.0	11.5	19.5	18.5	14.5
26	5.0	0.5	0.0	1.0	3.5	5.0	8.5	11.5	11.5	20.0	19.5	14.0
27	4.5	0.5	0.0	1.0	4.5	6.0	---	10.0	14.5	19.5	17.0	12.0
28	3.5	0.5	0.0	1.0	---	5.0	5.5	11.5	14.5	18.0	17.0	11.5
29	4.5	0.5	1.0	1.5	3.0	4.0	5.0	14.0	15.0	18.0	17.0	12.0
30	5.0	0.5	1.5	2.0	---	4.5	8.5	13.0	16.0	18.5	18.0	13.0
31	6.0	---	1.0	1.0	---	6.0	---	13.0	---	18.5	17.0	---
MONTH	8.5	3.5	1.0	0.5	1.5	3.5	9.5	12.0	12.5	18.5	18.0	15.0

YEAR MAX 20.0 MIN 0.0 MEAN 8.5

06214500 YELLOWSTONE RIVER AT BILLINGS, MT--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .062 MM
OCT						
07...	1100	11.5	4170	19	214	40
NOV						
19...	0915	1.0	5100	12	165	55
DEC						
09...	0915	4.0	5160	32	446	57
JAN						
19...	1600	1.0	4920	34	452	52
FEB						
11...	1030	1.0	4140	43	481	29
MAR						
10...	1015	1.5	3840	45	467	74
APR						
15...	1100	12.5	6810	137	2520	78
MAY						
12...	0945	11.0	21700	721	42200	68
JUN						
29...	1030	16.0	21100	121	6890	44
JUL						
14...	1000	17.5	21500	99	5750	59
AUG						
12...	0930	18.5	8740	45	1060	65

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON

Date	Length of exposure (days)	Biomass (g/m^2) Dry weight	Ash weight	Chlorophyll a (mg/m^2)	Chlorophyll b (mg/m^2)	Biomass pigment ratio	Sampling method
Feb 11	23	1.20	.400	.200	.000	3400	Polyethylene strip

PHYTOPLANKTON
OCT. 7, 1975
1100 HOURS
4,800 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...CYMBELLACEAE				
D	....CYMBELLA		960	20	
	....EPITHEMIA		210	4	
	...DIATOMACEAE				
	....DIATOMA		430	9	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		750	16	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		1,300	27	
	...NITZSCHIACEAE				
D	....NITZSCHIA		1,200	24	
		TOTALS	4,800	100	2.397=DIVERSITY

NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
FAMILY 2.230
GENERA 2.397

06214500 YELLOWSTONE RIVER AT BILLINGS, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
NOV. 19, 1975
0945 HOURS
2,900 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...FRAGILARIACEAE				
	....H.ARCUS				
	.....H.ARCUS		20	1	
	...ACHNANTHACEAE				
	....ACHNANTHES		280	10	
	....COCCONEIS		60	2	
	....RHOICOSPHENIA		20	1	
	...CYMBELLACEAE				
	....CYMBELLA		200	7	
	...DIATOMACEAE				
	....DIATOMA		180	6	
	...FRAGILARIACEAE				
	....SYNEDRA		20	1	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		120	4	
	...MERIDIONACEAE				
	....MERIDION		20	1	
	...NAVICULACEAE	NAVICULOID			
L	....CALONEIS			0	
	....NAVICULA		400	14	
	...NITZSCHIACEAE				
	....NITZSCHIA		420	14	
	...SURIRELLACEAE				
	....SURIRELLA		20	1	
		TOTALS	1,800	62	2.891=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
D	....LYNGBYA		1,200	40	
		TOTALS	1,200	40	0.000=DIVERSITY

PHYL/DIV	0.969
CLASS	0.969
ORDER	0.969
FAMILY	2.596
GENERA	2.712

DEC. 9, 1975
0915 HOURS
3,500 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....MELOSIRA		47	1	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		330	9	
L	....COCCONEIS			0	
L	....RHOICOSPHENIA			0	
	...CYMBELLACEAE				
	....CYMBELLA		430	12	
L	....EPITHEMIA			0	
	...DIATOMACEAE				
D	....DIATOMA		620	18	
	...FRAGILARIACEAE				
	....SYNEDRA		47	1	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		95	3	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		800	23	
	...NITZSCHIACEAE				
D	....NITZSCHIA		990	28	
	...SURIRELLACEAE				
	....SURIRELLA		140	4	
		TOTALS	3,500	99	2.632=DIVERSITY

ORDER	0.103
FAMILY	2.632
GENERA	2.632

06214500 YELLOWSTONE RIVER AT BILLINGS, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
JAN. 19, 1976
1600 HOURS
1,400 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...SCENEDESMACEAE				
L	....SCENEDESMUS			0	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
L	....CYCLOTELLA			0	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		100	7	
	....COCCONEIS		33	2	
L	....RHOICOSPHENIA			0	
	...CYMBELLACEAE				
D	....CYMBELLA		300	21	
	...DIATOMACEAE				
	....DIATOMA		100	7	
	...EUNOTIACEAE				
L	....EUNOTIA			0	
	...FRAGILARIACEAE				
	....SYNEDRA		33	2	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		230	16	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		230	16	
	...NITZSCHIACEAE				
L	....DENTICULA			0	
D	....NITZSCHIA		370	26	
	...SURIRELLACEAE				
	....SURIRELLA		33	2	
		TOTALS	1,400	99	2.743=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
L	....OSCILLATORIA			0	

FAMILY 2.667
GENERA 2.743

FEB. 11, 1976
1030 HOURS
1,500 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		36	2	
L	....MELOSIRA			0	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		110	7	
L	....COCCONEIS			0	
L	....RHOICOSPHENIA			0	
	...CYMBELLACEAE				
D	....CYMBELLA		330	22	
	...DIATOMACEAE				
	....DIATOMA		36	2	
	...FRAGILARIACEAE				
L	....FRAGILARIA			0	
	....SYNEDRA		72	5	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		330	22	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		220	15	
	...NITZSCHIACEAE				
D	....NITZSCHIA		330	22	
	...SURIRELLACEAE				
	....SURIRELLA		36	2	
		TOTALS	1,500	99	2.727=DIVERSITY

ORDER 0.165
FAMILY 2.727
GENERA 2.727

06214500 YELLOWSTONE RIVER AT BILLINGS, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAR. 10, 1976
1015 HOURS
6,300 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....MELOSIRA		330	5	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		170	3	
	....COCCONEIS		170	3	
	...CYMBELLACEAE				
D	....CYMBELLA		1,300	21	
	...DIATOMACEAE				
	....DIATOMA		330	5	
	...FRAGILARIACEAE				
	....FRAGILARIA		170	3	
	...GOMPHONEMATACEAF				
D	....GOMPHONEMA		1,300	21	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		170	3	
	...NITZSCHIACEAE				
D	....NITZSCHIA		2,200	34	
	...SURIRELLACEAE				
	....SURIRELLA		170	3	
		TOTALS	6,300	101	2.614=DIVERSITY

ORDER 0.297
FAMILY 2.561
GENERA 2.614

APR. 15, 1976
1100 HOURS
12,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		150	1	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		1,000	9	
L	....COCCONEIS			0	
	....RHOICOSPHENIA		150	1	
	...CYMBELLACEAE				
L	....AMPHORA			0	
	....CYMBELLA		150	1	
D	....EPITHEMIA		2,800	24	
	...DIATOMACEAE				
	....DIATOMA		1,000	9	
	...FRAGILARIACEAE				
	....FRAGILARIA		450	4	
	....SYNEDRA		740	6	
	...GOMPHONEMATACEAE				
L	....GOMPHONEIS			0	
	....GOMPHONEMA		590	5	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		2,400	20	
L	....NEIDIUM			0	
	...NITZSCHIACEAE				
D	....NITZSCHIA		1,900	16	
	...SURIRELLACEAE				
	....SURIRELLA		300	3	
		TOTALS	12,000	99	3.032=DIVERSITY

ORDER 0.098
FAMILY 2.808
GENERA 3.032

PHYTOPLANKTON
MAY 12, 1976
0945 HOURS
9,600 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...FRAGILARIACEAE				
	....H.ARCUS		130	1	
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....MELOSIRA		65	1	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		520	5	
	....COCCONEIS		65	1	
	....RHOICOSPHENIA		130	1	
	...CYMBELLACEAE				
	....AMPHORA		200	2	
	....CYMBELLA		850	9	
	...DIATOMACEAE				
	....DIATOMA		850	9	
	...FRAGILARIACEAE				
	....SYNEDRA		1,000	11	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		1,400	15	
	...NAVICULACEAE	NAVICULOID			
	....CALONEIS		130	1	
O	....NAVICULA		2,900	30	
	...NITZSCHIACEAE				
	....NITZSCHIA		920	10	
	...SURIRELLACEAE				
	....SURIRELLA		390	4	
		TOTALS	9,600	100	3.104=DIVERSITY

ORDER 0.162
FAMILY 2.865
GENERA 3.104

JUNE 29, 1976
1030 HOURS
590 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...CHARACIACEAE				
	....SCHROEDERIA		5	1	
	...OOCYSTACEAE				
	....ANKISTRODESMUS		14	2	
		TOTALS	19	3	0.811=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...FRAGILARIACEAE				
	....H.ARCUS		14	2	
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		14	2	
	....MELOSIRA		14	2	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		42	7	
	....COCCONEIS		23	4	
	....RHOICOSPHENIA		19	3	
	...CYMBELLACEAE				
	....AMPHORA		5	1	
	....CYMBELLA		47	8	
	...DIATOMACEAE				
	....DIATOMA		19	3	
	...EUNOTIACEAE				
	....EUNOTIA		9	2	
	...FRAGILARIACEAE				
	....FRAGILARIA		23	4	
	....SYNEDRA		28	5	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		84	14	
	...MERIDIONACEAE				
	....MERIDION		5	1	
	...NAVICULACEAE	NAVICULOID			
O	....NAVICULA		120	20	
	...NITZSCHIACEAE				
	....NITZSCHIA		56	10	
	...SURIRELLACEAE				
	....SURIRELLA		51	9	
		TOTALS	570	97	3.611=DIVERSITY

PHYL/DIV 0.203
CLASS 0.203
ORDER 0.636
FAMILY 3.339
GENERA 3.725

06214500 YELLOWSTONE RIVER AT BILLINGS, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
JULY 14, 1976
1000 HOURS
1,300 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...FRAGILARIACEAE				
	....H.ARCUS		17	1	
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		52	4	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		170	13	
	....COCCONEIS		35	3	
	....RHOICOSPHENIA		35	3	
	...CYMBELLACEAE				
	....CYMBELLA		69	5	
	...DIATOMACEAE				
	....DIATOMA		52	4	
	...FRAGILARIACEAE				
	....FRAGILARIA		17	1	
	....SYNEDRA		35	3	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		190	14	
	...NAVICULACEAE	NAVICULOID			
O	....NAVICULA		330	24	
L	....PINNULARIA			0	
	...NITZSCHIACEAE				
D	....NITZSCHIA		310	23	
	...SURIRELLACEAE				
	....SURIRELLA		35	3	
		TOTALS	1,300	101	3.048=DIVERSITY

ORDER 0.333
FAMILY 2.806
GENERA 3.048

AUG. 12, 1976
0930 HOURS
3,400 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..ZYGNEMATALES				
	...DESMIDIACEAE	PLACODERM DESMIDS			
	....COSMARIUM		100	3	
		TOTALS	100	3	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...FRAGILARIACEAE				
	....H.ARCUS		100	3	
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
L	....CYCLOTELLA			0	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		300	9	
	....COCCONEIS		100	3	
	...CYMBELLACEAE				
	....CYMBELLA		200	6	
L	....EPITHEMIA			0	
	...DIATOMACEAE				
	....DIATOMA		300	9	
	...FRAGILARIACEAE				
	....SYNEDRA		100	3	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		200	6	
	...NAVICULACEAE	NAVICULOID			
O	....NAVICULA		700	21	
L	....PINNULARIA			0	
	...NITZSCHIACEAE				
O	....NITZSCHIA		1,300	38	
	...SURIRELLACEAE				
L	....SURIRELLA			0	
		TOTALS	3,300	98	2.582=DIVERSITY

PHYL/DIV 0.191
CLASS 0.191
ORDER 0.382
FAMILY 2.602
GENERA 2.697

06214500 YELLOWSTONE RIVER AT BILLINGS, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
SEP. 15, 1976
0945 HOURS
4,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		49	1	
	...CYMBELLACEAE				
D	....EPITHEMIA		690	17	
	...DIATOMACEAE				
D	....DIATOMA		1,900	49	
	...FRAGILARIACEAE				
	....SYNEDRA		250	6	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		450	11	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		350	9	
	....PINNULARIA		49	1	
	...NITZSCHIACEAE				
	....NITZSCHIA		200	5	
		TOTALS	4,000	99	2.232=DIVERSITY

FAMILY 2.177
GENERA 2.232

06216000 PRYOR CREEK AT PRYOR, MT

LOCATION.--Lat 45°26'06", long 108°32'01", in NE¼NW¼NE¼ sec.5, T.5 S., R.26 E., Big Horn County, Hydrologic Unit 10070008, on left bank at Pryor, 2 mi (3 km) downstream from Lost Creek.

DRAINAGE AREA.--117 mi^2 (303 km^2).

PERIOD OF RECORD.--June 1921 to September 1924 (no winter records), October 1966 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 3,990 ft (1,220 m), from topographic map. Prior to Oct. 14, 1966, nonrecording gage at approximately same site at different datum.

REMARKS.--Records good. Numerous diversions for irrigation above station.

AVERAGE DISCHARGE.--10 years (1966-76), 41.0 ft^3/s (1.161 m^3/s), 29,700 acre-ft/yr (36.6 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 468 ft^3/s (13.3 m^3/s) June 26, 1969, gage height, 6.13 ft (1.868 m); minimum observed, 3.4 ft^3/s (0.10 m^3/s) June 24, 1921, gage height, 0.86 ft (0.262 m), site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 187 ft^3/s (5.30 m^3/s) June 15, gage height, 4.31 ft (1.314 m); minimum, 27 ft^3/s (0.76 m^3/s) July 26, 29, 30, gage height, 2.44 ft (0.744 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	63	68	54	58	54	53	58	46	66	34	36
2	56	63	70	56	57	52	55	57	46	64	44	36
3	57	62	75	51	55	52	54	57	44	64	42	36
4	56	62	78	58	48	52	53	58	41	61	37	37
5	56	62	81	55	50	51	55	62	35	59	34	37
6	57	62	75	51	51	52	54	63	35	57	36	37
7	59	62	74	49	54	53	54	64	35	49	35	42
8	63	62	75	52	55	55	55	63	35	44	36	39
9	63	63	75	54	60	56	55	63	34	42	37	39
10	62	63	77	53	60	57	56	65	33	42	35	39
11	60	62	76	51	59	59	57	66	35	43	37	39
12	63	59	74	50	58	52	58	68	44	45	39	41
13	68	61	72	51	59	54	60	66	39	47	39	43
14	68	61	68	50	59	54	62	65	82	46	40	42
15	68	61	69	51	57	54	63	70	111	46	40	45
16	65	61	67	53	56	55	64	64	59	39	39	46
17	63	62	66	56	56	59	69	59	104	39	40	46
18	63	64	66	62	56	60	62	56	146	38	41	47
19	62	61	66	58	54	60	58	56	125	37	41	48
20	63	60	65	57	54	54	57	54	119	38	41	47
21	63	59	66	56	53	54	58	53	110	35	40	46
22	70	60	66	56	54	53	56	52	102	33	40	46
23	69	61	67	57	54	54	56	52	99	32	39	45
24	66	65	66	56	55	54	56	53	89	30	40	45
25	65	66	67	53	55	53	55	51	86	31	39	46
26	66	65	66	51	56	52	62	50	80	31	36	46
27	66	64	67	53	59	52	70	47	76	30	37	46
28	65	62	65	54	58	52	69	44	73	32	37	45
29	64	60	65	57	55	52	66	42	69	28	37	44
30	63	63	66	60	---	51	62	44	67	28	36	44
31	63	---	62	57	---	50	---	44	---	31	37	---
TOTAL	1949	1861	2160	1682	1615	1672	1764	1766	2099	1307	1185	1275
MEAN	62.9	62.0	69.7	54.3	55.7	53.9	58.8	57.0	70.0	42.2	38.2	42.5
MAX	70	66	81	62	60	60	70	70	146	66	44	48
MIN	56	59	62	49	48	50	53	42	33	28	34	36
AC-FT	3870	3690	4280	3340	3200	3320	3500	3500	4160	2590	2350	2530

CAL YR 1975 TOTAL 25646 MEAN 70.3 MAX 243 MIN 33 AC-FT 50870
WTR YR 1976 TOTAL 20335 MEAN 55.6 MAX 146 MIN 28 AC-FT 40330

06217500 YELLOWSTONE RIVER AT HUNTLEY, MT

LOCATION.--Lat 46°54'15", long 108°19'01", in N½SW¼ sec.24, T.2 N., R.27 E., Yellowstone County, Hydrologic Unit 10070007, at bridge on State Highway 312, 0.1 mi (0.2 km) downstream from Twelve Mile Creek, and 0.7 mi (1.1 km) northwest of Huntley.

DRAINAGE AREA.--12,840 mi² (33,256 km²).

PERIOD OF RECORD.--Water years 1951-52, 1971, 1972 to current year.

REMARKS.--Records of discharge are estimated from Yellowstone River at Billings (station 06214500). Flow affected by diversions for irrigation upstream from station.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	CHEMICAL OXYGEN DEMAND (HIGH LEVEL) (MG/L)	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)
OCT											
06...	1330	4170	490	8.5	27.0	14.5	4	9.6	104	7	--
28...	1030	6000	411	8.5	5.0	4.0	10	11.9	102	10	.6
NOV											
06...	0930	5390	432	8.3	13.0	7.5	3	10.6	99	9	--
25...	1030	4200	458	8.2	1.0	1.0	4	13.3	105	4	.5
DEC											
10...	1030	2600	504	8.3	1.5	5.0	20	9.0	79	16	--
22...	1200	4270	560	8.4	2.5	1.0	2	13.0	102	17	--
JAN											
12...	1030	3600	500	7.7	-2.0	.0	7	12.0	92	9	--
28...	1130	3940	530	7.9	9.5	1.0	9	12.6	99	9	1.3
FEB											
18...	1100	3500	520	8.1	4.5	2.0	20	12.2	98	9	--
24...	0930	3280	559	8.1	3.5	1.0	20	12.6	99	10	2.9
MAR											
09...	1400	3820	510	7.9	14.0	3.0	15	12.6	105	11	--
APR											
01...	1030	3220	510	8.2	9.5	9.0	10	10.4	101	20	1.7
14...	1000	6530	368	7.9	11.5	12.5	25	9.0	94	19	--
27...	0930	7050	525	7.8	1.0	5.0	30	11.0	96	19	--
MAY											
13...	1430	20100	235	7.8	29.0	13.5	30	9.2	98	32	--
25...	1430	30900	168	8.1	18.0	13.5	50	9.8	104	17	.8
JUN											
10...	1300	38900	125	7.2	25.0	15.5	45	8.8	98	44	.6
24...	1330	32500	155	7.9	24.0	14.0	35	9.4	101	22	2.5
JUL											
13...	0915	22500	170	7.4	20.0	17.5	15	8.3	97	3	--
27...	0915	12300	250	7.9	27.5	21.5	15	7.5	95	9	3.0
AUG											
10...	1430	9770	310	8.1	29.0	21.0	10	8.1	101	18	--
25...	1200	5630	371	8.2	26.0	20.0	6	8.4	104	8	1.7
SEP											
09...	0930	5050	440	8.2	14.0	14.0	9	8.4	90	24	--
21...	0915	6350	390	8.2	20.0	14.0	10	9.6	103	6	1.2

06217500 YELLOWSTONE RIVER AT HUNTLEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)
OCT											
06...	3800	1500	--	--	--	--	--	--	--	--	--
28...	8400	960	170	27	43	14	29	1.0	3.1	168	0
NOV											
06...	260000	19000	--	--	--	--	--	--	--	--	--
25...	20000	2300	160	23	42	14	29	1.0	3.2	170	0
DEC											
10...	4600	3800	--	--	--	--	--	--	--	--	--
22...	15000	1400	190	37	48	17	32	1.0	3.2	186	0
JAN											
12...	20000	1600	--	--	--	--	--	--	--	--	--
28...	63000	1600	180	36	47	16	36	1.2	3.0	180	0
FEB											
18...	30000	2300	--	--	--	--	--	--	--	--	--
24...	42000	2800	190	42	48	17	39	1.2	3.2	180	0
MAR											
09...	1800	590	--	--	--	--	--	--	--	--	--
APR											
01...	50000	1100	190	41	47	18	37	1.2	3.7	183	0
14...	64000	600	--	--	--	--	--	--	--	--	--
27...	81000	3900	170	40	41	17	42	1.4	3.1	162	0
MAY											
13...	3400	360	--	--	--	--	--	--	--	--	--
25...	25000	1700	67	0	16	6.5	9.3	.5	1.2	81	0
JUN											
10...	1400	530	--	--	--	--	--	--	--	--	--
24...	1700	93	53	0	15	3.8	9.3	.6	2.2	74	0
JUL											
13...	4500	500	--	--	--	--	--	--	--	--	--
27...	2100	110	90	6	23	7.9	16	.7	2.3	102	0
AUG											
10...	--	490	--	--	--	--	--	--	--	--	--
25...	--	220	130	26	34	12	23	.9	5.1	132	0
SEP											
09...	3300	430	--	--	--	--	--	--	--	--	--
21...	2900	2100	150	20	38	14	24	.8	3.1	161	0

DATE	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	SUSPENDED SOLIDS (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)
OCT											
06...	148	--	--	--	--	289	--	.39	3250	48	.08
28...	138	85	6.3	.4	12	286	276	.39	4630	56	.14
NOV											
06...	116	--	--	--	--	269	--	.37	3920	8	.11
25...	139	87	7.3	.5	14	270	281	.37	3060	10	.28
DEC											
10...	140	--	--	--	--	309	--	.42	2170	48	.30
22...	153	94	7.7	.4	15	314	309	.43	3620	9	.40
JAN											
12...	134	--	--	--	--	296	--	.40	2880	7	.44
28...	148	110	8.9	.5	15	326	326	.44	3470	21	.42
FEB											
18...	140	--	--	--	--	340	--	.46	3210	16	.36
24...	148	110	10	.5	13	344	330	.47	3050	43	.34
MAR											
09...	127	--	--	--	--	324	--	.44	3340	52	.32
APR											
01...	150	110	8.6	.5	11	332	326	.45	2890	38	.14
14...	114	--	--	--	--	238	--	.32	4200	105	.25
27...	133	130	6.9	.4	11	333	332	.45	6340	82	.16
MAY											
13...	110	--	--	--	--	160	--	.22	8680	300	.37
25...	66	20	2.3	.2	12	124	108	.17	10300	155	.16
JUN											
10...	41	--	--	--	--	88	--	.12	9240	149	.09
24...	61	19	2.6	.4	13	105	102	.14	9210	112	.07
JUL											
13...	56	--	--	--	--	124	--	.17	7530	41	.11
27...	84	36	4.8	.4	11	150	152	.20	4980	40	.04
AUG											
10...	94	--	--	--	--	181	--	.25	4780	24	.07
25...	108	64	8.3	.5	12	224	224	.30	3410	8	.04
SEP											
09...	123	--	--	--	--	272	--	.37	3710	35	.14
21...	132	75	5.9	.4	12	235	252	.32	4030	13	.01

06217500 YELLOWSTONE RIVER AT HUNTLEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	DISSOLVED ORGANIC CARBON (C) (MG/L)	SUSPENDED ORGANIC CARBON (C) (MG/L)	OIL AND GREASE (MG/L)
OCT											
06...	.07	.33	.40	.48	.04	--	--	11	--	--	0
28...	.08	.45	.53	.67	.05	150	10	3.2	2.9	.6	0
NOV											
06...	.04	.27	.31	.42	.03	--	--	4.1	--	--	0
25...	.02	.34	.36	.64	.01	200	20	10	--	--	0
DEC											
10...	.09	.69	.78	1.1	.07	--	--	6.3	--	--	0
22...	.05	.15	.20	.60	.03	200	10	5.7	--	--	0
JAN											
12...	.09	.56	.65	1.1	.03	--	--	2.1	--	--	0
28...	.08	.48	.56	.98	.04	160	20	3.8	1.8	.7	0
FEB											
18...	.05	.43	.48	.84	.07	--	--	7.3	--	--	0
24...	.13	.80	.93	1.3	.12	200	30	18	--	--	0
MAR											
09...	.09	.24	.33	.65	.07	--	--	3.8	--	--	0
APR											
01...	.12	.31	.43	.57	.07	190	0	3.8	--	--	1
14...	.05	.95	1.0	1.3	.29	--	--	7.4	--	--	0
27...	.03	1.4	1.4	1.6	.15	140	40	--	6.3	.1	0
MAY											
13...	.03	1.5	1.5	1.9	.30	--	--	12	--	--	0
25...	.01	.54	.55	.71	.23	50	80	7.7	--	--	0
JUN											
10...	.02	.41	.43	.52	.19	--	--	3.5	--	--	--
24...	.01	.24	.25	.32	.11	90	70	4.9	--	--	0
JUL											
13...	.00	.30	.30	.41	.04	--	--	4.1	--	--	5
27...	.01	.42	.43	.47	.09	100	110	6.1	3.2	.9	0
AUG											
10...	.02	.18	.20	.27	.05	--	--	4.3	--	--	0
25...	.01	.36	.37	.41	.02	150	20	2.4	--	--	6
SEP											
09...	.05	.30	.35	.49	.10	--	--	3.7	--	--	0
21...	.00	.23	.23	.24	.04	140	120	9.5	--	--	13

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	DISSOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)
OCT											
28...	1030	440	40	10	10	0	1	0	0	6	0
JAN											
28...	1130	260	70	10	10	0	0	<10	2	0	0
APR											
27...	0930	2600	30	11	9	0	0	10	0	0	0
JUL											
27...	0915	1000	30	8	7	0	0	<10	1	10	20

DATE	TOTAL COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	DISSOLVED LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)
OCT										
28...	0	1	460	<100	2	30	30	30	5	.2
JAN										
28...	20	12	250	<100	9	60	60	30	20	.1
APR										
27...	150	3	3100	<100	1	40	30	130	10	.1
JUL										
27...	20	9	980	<100	2	40	30	40	40	.0

06217500 YELLOWSTONE RIVER AT HUNTLEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
28...	.1	2	2	<50	4	1	1	1.8	2	2
JAN										
28...	.2	2	2	<50	9	1	1	1.1	50	40
APR										
27...	.1	2	1	50	4	1	1	1.2	190	10
JUL										
27...	.0	1	2	<50	5	0	0	.6	20	40

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .062 MM
OCT						
28...	1030	4.0	6000	25	405	--
NOV						
25...	1030	1.0	4200	16	181	--
DEC						
22...	1200	1.0	4270	19	219	--
JAN						
28...	1130	1.0	3940	38	404	--
FEB						
24...	0930	1.0	3280	60	531	--
APR						
01...	1030	9.0	3220	41	356	--
27...	0930	5.0	7050	140	2660	--
MAY						
25...	1430	13.5	30900	309	25800	--
JUN						
24...	1330	14.0	32500	165	14500	78
JUL						
27...	0915	21.5	12300	119	3950	47
AUG						
25...	1200	20.0	5630	28	426	67
SEP						
21...	0915	14.0	6350	63	1080	76

06217750 FLY CREEK AT POMPEYS PILLAR, MT

LOCATION.--Lat 45°59'33", long 107°57'07", in NW¼SE¼ sec.23, T.3 N., R.30 E., Yellowstone County, Hydrologic Unit 10070007, on right bank at county bridge at Pompeys Pillar and 0.5 mi (0.8 km) upstream from mouth.

DRAINAGE AREA.--285 mi^2 (738 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Nonrecording gage. Altitude of gage is 2,870 ft (875 m), from topographic map.

REMARKS.--Water-discharge records poor. Flow affected by waste water from irrigation ditches and by return flow from irrigated areas upstream. Discharge is combined flow of Fly Creek near Pompeys Pillar and Lost Boy Creek.

AVERAGE DISCHARGE.--8 years, 36.1 ft^3/s (1.022 m^3/s), 26,150 acre-ft/yr (32.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,680 ft^3/s (75.9 m^3/s) Feb. 14, 1971, gage height, 9.23 ft (2.813 m), from floodmark; minimum daily, 1.7 ft^3/s (0.048 m^3/s) Dec. 29, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge observed, 74 ft^3/s (2.10 m^3/s) June 28, gage height, 5.37 ft (1.637 m); maximum gage height, 5.74 ft (1.750 m) Sept. 27 (backwater from algae); minimum daily discharge, 2.2 ft^3/s (0.062 m^3/s) Jan. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	10	13	12	27	6.2	6.0	8.0	17	43	20	39
2	65	11	11	11	46	5.8	5.7	8.6	17	34	20	39
3	65	10	9.1	8.7	21	6.3	6.9	8.4	17	27	35	39
4	54	10	7.1	7.7	13	6.8	7.3	9.6	21	24	27	37
5	54	9.1	4.0	7.2	10	7.0	7.6	10	20	23	26	30
6	63	10	8.8	6.7	8.2	5.0	7.3	12	16	23	36	41
7	60	9.1	9.2	6.2	6.0	5.4	6.7	12	15	23	40	45
8	61	10	9.6	5.7	6.5	5.7	6.8	12	18	26	26	41
9	38	8.7	9.6	4.7	12	6.0	7.2	12	16	24	24	42
10	15	8.7	9.6	3.7	15	8.0	7.4	8.8	20	20	23	47
11	13	8.7	9.0	2.7	8.8	6.7	7.7	9.0	34	21	25	46
12	14	8.9	8.2	2.2	11	8.6	8.4	37	50	24	33	49
13	14	8.9	7.7	2.3	11	7.8	8.9	45	52	37	33	52
14	13	8.7	7.2	2.7	20	5.8	9.7	40	68	26	40	44
15	11	8.2	6.7	5.2	10	7.4	8.9	47	63	28	17	41
16	14	7.6	6.2	6.6	8.0	8.9	8.7	46	66	23	16	37
17	12	7.8	5.7	5.2	6.4	9.0	11	47	65	51	19	37
18	13	9.1	5.2	5.0	5.1	10	7.0	40	65	58	21	49
19	10	7.6	4.7	12	5.6	9.4	6.8	48	63	62	37	55
20	11	8.7	4.7	49	4.0	9.0	6.8	54	60	55	38	53
21	13	8.6	4.7	21	4.6	9.4	6.5	63	60	57	44	54
22	13	7.9	5.2	7.7	5.7	9.4	6.1	61	62	64	25	45
23	13	7.9	5.2	6.0	5.1	9.2	6.1	56	66	61	26	44
24	14	7.9	5.4	5.0	6.0	7.1	5.9	47	61	68	27	48
25	13	7.4	5.6	4.5	5.2	6.7	7.9	45	60	55	29	49
26	13	7.4	5.8	4.5	5.9	6.9	7.7	26	59	47	37	61
27	13	7.4	6.0	5.0	6.6	6.9	7.7	20	71	45	27	73
28	13	7.9	6.4	7.0	8.4	7.1	6.3	24	74	36	27	60
29	11	10	6.0	9.0	6.9	7.5	8.7	17	72	36	24	56
30	13	12	6.8	18	---	6.6	12	17	50	25	32	62
31	10	---	12	34	---	6.7	---	17	---	24	39	---
TOTAL	804	265.2	225.4	288.2	309.0	228.3	227.7	907.4	1404	1100	893	1415
MEAN	25.9	8.84	7.27	9.30	10.7	7.36	7.59	29.3	46.8	37.4	28.8	47.2
MAX	65	12	13	49	46	10	12	63	74	68	44	73
MIN	10	7.4	4.0	2.2	4.0	5.0	5.7	8.0	15	20	16	30
AC-FT	1590	526	447	572	613	453	452	1800	2780	2300	1770	2810

CAL YR 1975 TOTAL 12039.3 MEAN 33.0 MAX 511 MIN 4.0 AC-FT 23880
WTR YR 1976 TOTAL 8127.2 MEAN 22.2 MAX 74 MIN 2.2 AC-FT 16120

06217750 FLY CREEK AT POMPEYS PILLAR, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to current year.
WATER TEMPERATURES: October 1968 to current year.

REMARKS.--Flow affected by diversions for irrigation upstream from station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,100 micromhos May 10, 1976; minimum daily, 262 micromhos Feb. 14, 1971.
WATER TEMPERATURES: Maximum daily, 26.5°C July 3, 1975; minimum daily, 0.0°C on many days during winter periods most years.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,100 micromhos May 10; minimum daily, 657 micromhos June 29.
WATER TEMPERATURES: Maximum daily, 23.0°C July 1, 5; minimum daily, 0.0°C on several days during November to March.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE (DEG C)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
OCT												
14...	0930	13	1900	7.5	720	380	140	89	230	3.7	5.1	406
NOV												
04...	0930	10	2510	5.5	790	450	150	100	320	5.0	5.3	413
DEC												
01...	1030	13	3000	.5	920	530	170	120	430	6.2	5.8	472
JAN												
05...	1100	7.1	3630	.0	1100	650	200	140	470	6.2	6.0	516
FEB												
06...	1330	8.6	3000	.0	800	470	140	110	380	5.8	5.8	405
MAR												
05...	1300	7.0	3180	.0	1000	640	170	140	420	5.8	4.8	446
APR												
09...	1200	7.3	3200	12.0	960	580	170	130	470	6.6	5.5	468
MAY												
07...	1130	12	3900	11.5	1000	650	160	150	620	8.5	7.5	450
JUN												
14...	1315	79	870	12.0	260	120	53	30	94	2.6	2.9	165
JUL												
09...	1150	24	1490	19.0	520	270	110	60	190	3.6	5.4	309
AUG												
05...	1115	26	1470	18.0	490	240	100	58	160	3.2	5.2	304
SEP												
10...	1055	50	1020	13.5	350	150	76	40	100	2.3	4.7	248

DATE	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT												
14...	860	14	.5	14	1550	2.11	54.8	.26	.01	.00	10	40
NOV												
04...	1100	21	.5	12	1910	2.60	53.1	.19	.01	.02	10	50
DEC												
01...	1400	24	.5	14	2400	3.26	84.2	1.1	.00	.01	30	40
JAN												
05...	1600	35	.5	13	2720	3.70	52.1	.28	.01	.01	20	60
FEB												
06...	1300	3.0	.4	10	2150	2.92	49.9	.16	.00	.00	30	100
MAR												
05...	1400	29	.5	10	2390	3.25	45.2	.06	.00	.01	0	60
APR												
09...	1500	33	.5	8.3	2550	3.47	50.3	.07	.00	.00	0	170
MAY												
07...	1900	55	.4	6.0	3120	4.24	101	.06	.03	.00	10	140
JUN												
14...	310	7.5	.3	11	593	.81	126	.60	.01	.03	30	40
JUL												
09...	640	12	.5	12	1180	1.60	76.8	.12	.02	.01	40	130
AUG												
05...	570	11	.5	13	1070	1.46	75.1	.13	.03	.03	30	100
SEP												
10...	330	9.7	.5	14	698	.95	94.2	.13	.03	.04	120	30

06217750 FLY CREEK AT POMPEYS PILLAR, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	795	2590	2790	3260	3010	2980	3310	3860	1380	974	1630	941
2	831	2580	2680	3260	2360	---	3320	3540	1840	1010	1380	941
3	800	2550	2640	---	2180	---	3290	3350	1880	1120	925	1000
4	910	2540	2640	---	---	---	3250	3350	1490	1630	1100	970
5	771	2580	2640	3350	---	---	3240	3360	1460	1410	1250	1030
6	731	2570	2700	---	2710	3030	3220	4000	1780	1650	1030	915
7	779	2580	2900	---	---	3060	3220	3890	1770	1480	945	1000
8	794	2580	2900	---	2780	3040	3220	3920	1700	1300	1060	1020
9	967	2590	2900	---	2700	3100	3210	3920	1760	1560	1600	899
10	1780	2590	2900	---	2910	3250	3210	4100	850	1200	1600	982
11	1790	2600	---	---	3060	3390	3260	3660	1220	1780	1550	973
12	1990	2630	3170	---	2900	3470	3260	898	715	1680	1140	899
13	2000	2610	3100	---	2690	3310	2970	928	951	1400	1140	963
14	2070	2600	3110	3200	2790	3230	2950	917	1220	722	1090	1000
15	2130	2630	---	3120	2800	3110	3180	948	830	1540	1500	1020
16	2150	2620	---	3120	2760	2990	3140	1030	1280	1330	1500	1090
17	2160	2640	---	3080	2760	3000	3130	1030	1290	868	1520	1120
18	2200	2620	---	3000	2780	3200	3400	1210	1290	811	1480	969
19	2210	2630	---	3050	2770	3290	3410	967	1110	880	980	967
20	2240	2800	---	3350	2810	3230	3510	1200	963	879	980	989
21	2040	2920	---	3280	2890	3090	3300	832	882	843	884	911
22	2090	2890	---	3170	3080	3350	3470	745	918	903	931	1060
23	2210	2820	---	2440	3120	3250	3300	732	880	779	1260	1060
24	2290	2720	---	2720	3170	3090	3300	740	864	789	1260	1010
25	2350	2690	---	2990	3170	3100	3520	738	870	866	1100	938
26	2440	2690	2900	---	3130	3200	3500	1410	830	978	1040	931
27	2510	2750	2900	---	3110	3170	3690	1330	824	1010	855	843
28	2560	2760	3000	3200	3090	3190	3590	1210	660	1170	970	951
29	2520	---	3010	3140	3050	3260	2690	1790	657	1140	1020	935
30	2580	2910	3010	2890	---	3340	3790	1520	751	1420	1020	853
31	2590	---	3070	3050	---	3410	---	1370	---	1430	1140	---
MONTH	1820	2660	---	---	2870	3190	3300	2020	1160	1180	1190	970

YEAR MAX 4100 MIN 657 MEAN 2120

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	7.5	2.0	0.0	2.0	1.0	8.5	15.0	19.0	23.0	16.0	18.5
2	13.0	6.0	1.0	1.0	2.5	0.0	4.5	15.5	19.0	18.0	15.5	18.5
3	15.0	7.0	2.0	---	0.0	0.0	10.0	17.5	19.5	18.0	15.0	17.0
4	14.0	5.5	2.0	---	---	0.0	10.0	14.5	20.5	22.5	20.5	15.5
5	15.0	5.5	0.0	0.0	---	0.0	---	14.0	20.0	23.0	19.0	14.5
6	14.5	6.0	2.0	---	0.5	2.0	---	16.0	21.0	21.0	18.0	16.0
7	12.0	6.0	3.0	---	---	2.5	---	12.0	20.0	22.0	17.5	14.0
8	10.0	3.5	2.5	---	1.0	3.5	---	18.0	20.0	19.5	19.5	14.5
9	10.0	3.5	3.0	---	1.0	4.0	---	16.5	21.0	21.0	17.5	13.5
10	12.0	3.5	1.0	---	1.0	7.0	---	21.5	15.5	20.5	17.0	15.0
11	12.0	2.5	---	---	2.0	1.5	10.0	16.0	15.0	21.0	16.5	16.0
12	11.0	3.0	1.0	---	1.0	2.0	10.0	14.0	15.5	19.0	16.0	13.5
13	9.0	4.0	2.0	---	1.5	5.0	10.5	17.0	15.0	18.0	16.5	13.0
14	9.0	4.5	0.0	2.0	0.5	3.5	11.0	18.0	15.0	20.5	18.0	15.0
15	9.0	4.0	---	2.0	0.0	1.0	16.0	14.0	15.5	20.0	19.0	15.5
16	9.0	4.5	---	1.5	2.5	7.5	10.5	17.0	16.5	20.0	19.5	16.0
17	10.0	5.0	---	1.5	2.5	4.0	11.0	17.0	15.0	21.0	15.0	16.0
18	10.0	4.0	---	1.5	0.5	6.5	13.5	17.0	14.5	19.5	18.0	14.5
19	11.0	4.0	---	1.0	3.5	6.5	12.5	18.0	15.5	19.5	17.0	14.0
20	9.5	2.0	---	0.5	3.5	5.5	12.0	18.0	17.0	20.0	17.5	13.5
21	7.0	1.0	---	1.0	4.0	5.0	12.5	16.0	19.0	20.0	17.0	13.0
22	5.0	2.0	---	2.0	3.0	9.0	11.5	16.0	17.5	20.5	18.0	14.0
23	5.0	1.5	---	1.5	4.5	5.5	10.0	15.0	17.0	18.0	19.0	14.5
24	5.0	1.5	---	1.5	5.5	9.0	8.5	16.0	16.5	19.0	19.5	14.0
25	4.5	1.0	---	0.0	6.5	9.5	9.5	15.5	14.5	22.0	19.5	12.0
26	5.0	0.0	2.0	---	4.5	9.5	10.0	17.0	12.5	22.0	17.0	12.5
27	4.0	0.0	2.5	---	5.0	7.0	10.0	17.0	15.0	19.0	15.5	10.0
28	4.5	0.0	2.5	1.0	4.5	8.5	9.5	16.5	17.0	20.5	17.0	10.5
29	5.0	0.0	2.5	2.5	2.0	7.5	11.0	18.0	17.5	15.5	18.0	13.0
30	6.0	0.0	2.5	2.5	---	8.5	10.5	19.0	18.5	18.5	17.5	14.0
31	7.0	---	0.0	0.5	---	8.0	---	18.5	---	18.0	14.5	---
MONTH	9.5	3.5	---	---	2.5	5.0	10.5	16.5	17.0	20.0	17.5	14.5

YEAR MAX 23.0 MIN 0.0 MEAN 10.5

06279500 BIGHORN RIVER AT KANE, WY

LOCATION.--Lat 44°45'31", long 108°10'51", in NW¼NE¼SW¼ sec.9, T.55 N., R.94 W., Big Horn County, Hydrologic Unit 10080010, on right bank 180 ft (55 m) upstream from Bighorn Canyon National Recreation Area boundary, 0.5 mi (0.8 km) upstream from normal high-water line of Bighorn Lake at elevation 3,660 ft (1,116 m), 1.3 mi (2.1 km) upstream from Five Springs Creek, and 5.9 mi (9.5 km) south of Kane.

DRAINAGE AREA.--15,765 mi² (40,831 km²). Area at sites used prior to May 17, 1956, 15,846 mi² (41,041 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to current year.

REVISED RECORDS.--WSP 1309: 1929(M). WSP 1509: 1929. WSP 1709: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 3,660 ft (1,116 m), from topographic map. Aug. 29, 1928, to Apr. 25, 1932, nonrecording gage, and Apr. 25, 1932, to May 16, 1956, water-stage recorder, at site 12.5 mi (20.1 km) downstream at different datum.

REMARKS.--Water-discharge records fair except those for winter period, which are poor. Some regulation by Boysen Reservoir since October 1951. Diversions for irrigation of about 376,000 acres (1,522 km²) above station.

AVERAGE DISCHARGE.--48 years, 2,302 ft³/s (65.19 m³/s), 1,668,000 acre-ft/yr (2,057 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,200 ft³/s (714 m³/s) June 16, 1935, gage height, 11.10 ft (3.383 m), site and datum then in use; minimum daily, 179 ft³/s (5.07 m³/s) July 22, 1934.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 14.8 ft (4.51 m) Sept. 30, 1923, site and datum in use April 1932 to May 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,830 ft³/s (222 m³/s) June 22, gage height, about 5.2 ft (1.58 m); maximum gage height, 8.84 ft (2.694 m) Nov. 29 (backwater from ice); minimum daily discharge, 980 ft³/s (27.8 m³/s) Sept. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1790	2180	1500	2500	2400	2000	1840	2280	3790	2560	1430	1030
2	1800	2160	1600	2300	2400	1900	1870	2200	3990	3190	2610	1000
3	1780	2130	1800	2200	2400	1800	2230	2180	4500	2980	4970	990
4	1780	2060	1900	2300	2400	1700	2250	2120	4930	2440	4140	980
5	1800	2120	2000	2500	2300	1800	2250	1400	5050	2470	3050	1040
6	1810	2090	1900	2600	2200	1900	2280	1610	5250	2400	2620	1100
7	1830	2130	1800	2500	2100	2100	2350	2130	5510	2360	2190	1180
8	1840	2120	1800	2400	2100	2200	2220	2130	5670	2200	1940	1250
9	1970	2060	1800	2500	2200	2300	2500	1910	5370	1950	1750	1320
10	1920	2020	1800	2500	2400	2600	2700	2010	4790	1810	1490	1340
11	1920	2020	1800	2500	2500	3000	2700	2060	4370	1740	1310	1380
12	1910	1870	1700	2500	2500	2800	2610	2150	4140	1670	1200	1400
13	1990	1810	1700	2400	2400	2700	2580	2080	3700	1500	1190	1460
14	2320	1870	2000	2400	2400	2600	2590	1800	3190	1340	1200	1480
15	2440	1940	2400	2500	2400	2600	2610	1800	3620	1170	1220	1550
16	2280	1980	2400	2600	2400	2700	2560	2530	4440	1020	1170	1580
17	2250	1970	2200	2700	2400	3050	2540	2250	4810	1000	1110	1580
18	2130	1970	2000	2600	2400	3680	2440	2120	4250	1070	1090	1570
19	2160	1850	1900	2500	2400	3990	2220	2380	4180	1060	1090	1950
20	2130	1800	2000	2500	2400	3290	2420	2740	4040	1040	1090	3220
21	2120	1780	2000	2500	2300	2690	2360	3480	4420	1120	1090	2200
22	2060	1700	2000	2500	2200	2530	2230	3770	5310	1220	1100	1980
23	2190	1660	2100	2500	2400	2580	2250	3570	6680	1260	1100	1950
24	2160	1810	2100	2500	2500	2620	2180	3590	5530	1100	1030	2060
25	2080	1870	2200	2500	2300	2590	2150	3610	4400	1090	1040	2020
26	2120	1880	2200	2400	2000	2130	2130	4160	3530	1080	1070	2110
27	2130	1800	2300	2300	2000	1990	2350	3710	2690	1120	1100	2010
28	2180	1700	2400	2400	2000	2300	2670	3640	2230	1160	1140	2120
29	2180	1600	2400	2400	2000	2360	2660	4230	2080	1180	1140	2120
30	2130	1500	2500	2400	---	2320	2420	4610	2110	1250	1190	1830
31	2180	---	2500	2400	---	1970	---	4250	---	1250	1130	---
TOTAL	63380	57450	62700	76300	66800	76790	71160	84500	128570	49800	49990	48800
MEAN	2045	1915	2023	2461	2303	2477	2372	2726	4286	1606	1613	1627
MAX	2440	2180	2500	2700	2500	3990	2700	4610	6680	3190	4970	3220
MIN	1780	1500	1500	2200	2000	1700	1840	1400	2080	1000	1030	980
AC-FT	125700	114000	124400	151300	132500	152300	141100	167600	255000	98780	99160	96790

CAL YR 1975 TOTAL 1037510 MEAN 2842 MAX 10900 MIN 950 AC-FT 2058000
WTR YR 1976 TOTAL 836240 MEAN 2285 MAX 6680 MIN 980 AC-FT 1659000

06279500 BIGHORN RIVER AT KANE, WY--Continued

WATER-QUALITY RECORDS

LOCATION.--Daily water temperatures and samples for specific conductance collected at Magcobar Corp. bridge 24.5 mi (39.4 km) upstream from discharge station.
PERIOD OF RECORD.--Water years 1974 to current year.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1955 to September 1957, December 1960 to September 1976 (discontinued).
WATER TEMPERATURES: July to September 1949, October 1950 to September 1976 (discontinued).
REMARKS.--No appreciable inflow between sampling site and discharge station except during periods of intense local precipitation.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,100 micromhos Jan. 31, 1976; minimum daily, 351 micromhos June 17, 1974.
WATER TEMPERATURES: Maximum, 29.0°C July 14, 30, 1952, July 12, 1954; minimum, 0.0°C on many days during winter periods.
EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,100 micromhos Jan. 31; minimum daily, 425 micromhos June 6, 8.
WATER TEMPERATURES: Maximum observed, 24.0°C July 12, minimum, 0.0°C on many days during November to March.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	FECAL COLIFORM (COL. PER 100 ML)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT									
05...	1130	1830	920	14.0	7	9.2	110	330	160
NOV									
09...	1200	2060	900	5.0	4	11.8	830	330	160
DEC									
07...	1200	A1800	1050	1.0	6	11.6	33	360	180
JAN									
11...	1230	A2500	880	1.0	1	11.1	72	290	120
FEB									
08...	1215	A2100	560	.0	8	10.8	35	310	120
MAR									
09...	1200	A2300	890	2.0	70	10.8	110	320	140
APR									
11...	1115	2720	930	10.5	80	11.0	56	300	130
MAY									
08...	1500	2090	940	16.5	90	9.3	130	290	130
JUN									
14...	0915	3030	520	10.0	45	9.1	170	190	75
JUL									
12...	1030	1660	670	24.0	4	7.7	110	240	110
AUG									
08...	0915	1950	950	20.0	100	7.4	150	300	130
SEP									
04...	1550	960	1100	22.0	6	8.9	56	330	140

A Daily mean discharge.
B Results based on colony count outside the acceptable range (non-ideal colony count).

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)
OCT									
05...	78	32	79	1.9	3.3	210	0	172	300
NOV									
09...	86	28	82	2.0	3.0	210	0	172	310
DEC									
07...	93	30	84	1.9	3.7	220	0	180	320
JAN									
11...	76	25	75	1.9	3.7	210	0	172	270
FEB									
08...	79	28	78	1.9	4.7	230	0	189	290
MAR									
09...	81	28	85	2.1	3.5	210	3	177	310
APR									
11...	78	26	79	2.0	3.7	190	6	166	290
MAY									
08...	75	25	82	2.1	3.5	200	0	164	290
JUN									
14...	51	15	41	1.3	2.1	140	0	115	150
JUL									
12...	63	21	59	1.6	2.3	160	0	131	220
AUG									
08...	78	26	85	2.1	3.3	210	0	172	290
SEP									
04...	85	28	100	2.4	4.2	230	0	189	340

06279500 BIGHORN RIVER AT KANE, WY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	DIS-SOLVED NITRATE (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
OCT								
05...	13	.6	9.4	622	.85	3070	.16	.05
NOV								
09...	16	.6	9.3	638	.87	3550	.09	.03
DEC								
07...	16	.6	9.0	661	.90	3210	.20	.02
JAN								
11...	13	.5	11	579	.79	3910	.20	.01
FEB								
08...	12	.6	9.7	610	.83	3460	.18	.07
MAR								
09...	16	.5	9.4	635	.86	3940	.14	.09
APR								
11...	15	.4	9.7	604	.82	4440	.09	.08
MAY								
08...	15	.6	10	601	.82	3390	.45	.16
JUN								
14...	9.3	.4	9.4	350	.48	2860	.02	.13
JUL								
12...	9.3	.5	8.5	467	.64	2090	.27	.03
AUG								
08...	13	.6	14	620	.84	3260	.77	.15
SEP								
04...	16	.8	7.7	708	.96	1840	2.2	.04

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE (CFS)	TOTAL PCB (UG/L)	PCB IN BOTTOM MA-TERIAL (UG/KG)	POLY-CHLO-RINATED NAPH-THA-LENES (UG/L)	TOTAL ALDRIN (UG/L)	ALDRIN IN BOTTOM MA-TERIAL (UG/KG)	TOTAL CHLOR-DANE (UG/L)	CHLOR-DANE IN BOTTOM MA-TERIAL (UG/KG)	TOTAL DDD (UG/L)
SEP										
23...	0915	1850	.0	0	.00	.00	.0	.0	0	.00

DATE	DDD IN BOTTOM MA-TERIAL (UG/KG)	TOTAL DDE (UG/L)	DDE IN BOTTOM MA-TERIAL (UG/KG)	TOTAL DDT (UG/L)	DDT IN BOTTOM MA-TERIAL (UG/KG)	TOTAL DI-AZINON (UG/L)	TOTAL DI-ELDRIN (UG/L)	DI-ELDRIN IN BOTTOM MA-TERIAL (UG/KG)	TOTAL ENDRIN (UG/L)
SEP									
23...	.0	.00	.1	.00	.0	.00	.00	.3	.00

DATE	ENDRIN IN BOTTOM MA-TERIAL (UG/KG)	TOTAL ETHION (UG/L)	TOTAL HEPTA-CHLOR (UG/L)	HEPTA-CHLOR IN BOTTOM MA-TERIAL (UG/KG)	TOTAL HEPTA-CHLOR EPOXIDE (UG/L)	HEPTA-CHLOR EPOXIDE IN BOT-TOM MA-TERIAL (UG/KG)	TOTAL LINDANE (UG/L)	LINDANE IN BOTTOM MA-TERIAL (UG/KG)	TOTAL MALA-THION (UG/L)
SEP									
23...	.0	.00	.00	.0	.00	.0	.00	.0	.00

DATE	TOTAL METHYL PARA-THION (UG/L)	TOTAL METHYL TRI-THION (UG/L)	TOTAL PARA-THION (UG/L)	TOTAL TOX-APHENE (UG/L)	TOX-APHENE IN BOTTOM MA-TERIAL (UG/KG)	TOTAL TRI-THION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)
SEP									
23...	.00	.00	.00	0	0	.00	.02	.01	.00

06279500 BIGHORN RIVER AT KANE, WY--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C). WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	936	964	1080	1010	835	865	1100	1050	552	583	964	1020
2	885	961	1060	997	840	931	1100	1010	554	824	838	1030
3	932	971	980	919	850	936	1080	979	476	504	830	1030
4	934	952	941	889	852	952	1030	979	444	596	984	1030
5	921	963	941	881	852	941	1090	1010	428	589	1050	1040
6	910	932	954	857	890	957	1030	1020	425	614	882	1020
7	910	951	956	841	910	827	1000	910	430	579	875	1010
8	940	951	956	859	940	951	1000	883	425	677	917	1010
9	890	951	971	864	907	929	968	889	426	604	946	999
10	936	929	971	854	1030	924	898	878	458	733	966	1010
11	945	959	990	853	1180	837	899	819	478	728	976	999
12	950	943	982	847	824	862	890	798	520	731	980	968
13	952	939	981	848	829	904	901	800	557	733	1010	978
14	930	985	964	851	840	968	907	819	542	748	999	998
15	984	975	767	850	862	949	902	815	655	780	1010	988
16	946	996	617	882	845	933	892	759	839	850	1010	986
17	986	1010	720	856	840	906	885	808	713	890	1010	975
18	973	1010	915	837	851	903	902	863	691	920	1010	963
19	944	998	951	872	857	935	936	813	676	918	1020	1030
20	941	971	909	899	862	903	947	702	719	943	1010	1010
21	933	993	931	976	862	961	918	582	646	940	1020	975
22	933	1020	917	1020	864	969	923	609	489	962	1010	1010
23	878	997	1060	1030	859	988	913	574	479	939	1020	978
24	934	997	996	907	859	1020	901	595	488	1000	1020	957
25	961	983	926	996	859	1040	892	595	572	1000	1040	936
26	961	983	936	1100	870	1050	924	576	604	982	1020	926
27	947	867	887	1350	905	1140	899	570	644	972	1040	987
28	958	964	906	1630	722	1090	964	563	677	972	1030	946
29	969	1030	915	2190	844	1010	964	512	733	970	1040	940
30	956	1080	957	2880	---	1020	988	481	703	990	1020	921
31	977	---	925	4100	---	1040	---	500	---	980	1030	---
MONTH	940	974	934	1150	874	956	955	766	568	815	986	989

YEAR MAX 4100 MIN 425 MEAN 910

TEMPERATURE (DEG. C) OF WATER. WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.0	7.0	0.0	0.0	0.0	0.0	7.0	9.0	13.0	19.0	21.0	18.0
2	12.0	7.0	0.0	0.0	0.0	0.0	7.0	10.0	14.0	19.0	21.0	18.0
3	12.0	7.0	0.0	0.0	0.0	0.0	6.0	12.0	14.0	17.0	19.0	18.0
4	13.0	6.0	0.0	0.0	0.0	0.0	6.0	13.0	14.0	18.0	18.0	18.0
5	12.0	6.0	0.0	0.0	0.0	0.0	8.0	11.0	15.0	19.0	17.0	18.0
6	13.0	5.0	0.0	0.0	0.0	0.0	9.0	12.0	15.0	20.0	19.0	18.0
7	14.0	7.0	0.0	0.0	0.0	0.0	9.0	13.0	15.0	20.0	20.0	16.0
8	10.0	6.0	0.0	0.0	0.0	0.0	9.0	13.0	15.0	20.0	19.0	15.0
9	8.0	3.0	0.0	0.0	0.0	0.0	9.0	14.0	15.0	20.0	20.0	13.0
10	9.0	2.0	0.0	0.0	0.0	3.0	9.0	15.0	16.0	20.0	20.0	13.0
11	10.0	3.0	1.0	0.0	0.0	3.0	10.0	16.0	15.0	20.0	18.0	15.0
12	10.0	0.0	0.0	0.0	0.0	0.0	10.0	11.0	15.0	20.0	19.0	16.0
13	9.0	0.0	0.0	0.0	0.0	0.0	10.0	12.0	14.0	19.0	19.0	16.0
14	8.0	1.0	0.0	0.0	0.0	1.0	9.0	14.0	10.0	20.0	18.0	16.0
15	7.0	2.0	0.0	0.0	0.0	1.0	9.0	14.0	8.0	19.0	19.0	15.0
16	8.0	4.0	0.0	0.0	0.0	2.0	10.0	11.0	13.0	20.0	17.0	16.0
17	8.0	5.0	0.0	0.0	0.0	3.0	7.0	12.0	12.0	21.0	17.0	17.0
18	10.0	4.0	0.0	0.0	0.0	2.0	8.0	15.0	14.0	23.0	20.0	17.0
19	10.0	2.0	0.0	0.0	1.0	4.0	9.0	16.0	15.0	22.0	20.0	14.0
20	10.0	0.0	0.0	0.0	1.0	2.0	8.0	15.0	16.0	22.0	20.0	13.0
21	10.0	0.0	0.0	0.0	1.0	2.0	9.0	15.0	17.0	21.0	20.0	13.0
22	10.0	0.0	0.0	0.0	0.0	3.0	9.0	14.0	17.0	21.0	20.0	15.0
23	6.0	0.0	0.0	0.0	0.0	4.0	9.0	14.0	14.0	22.0	22.0	15.0
24	4.0	0.0	0.0	0.0	0.0	4.0	10.0	12.0	14.0	22.0	20.0	15.0
25	5.0	0.0	0.0	0.0	1.0	6.0	9.0	13.0	15.0	21.0	19.0	15.0
26	4.0	0.0	0.0	0.0	0.0	3.0	9.0	12.0	13.0	20.0	20.0	14.0
27	5.0	0.0	0.0	0.0	0.0	5.0	8.0	13.0	14.0	21.0	15.0	11.0
28	4.0	0.0	0.0	0.0	0.0	4.0	7.0	14.0	15.0	19.0	15.0	11.0
29	4.0	0.0	0.0	0.0	0.0	4.0	7.0	14.0	17.0	20.0	17.0	12.0
30	5.0	0.0	0.0	0.0	---	5.0	8.0	12.0	18.0	20.0	18.0	12.0
31	5.0	---	0.0	0.0	---	6.0	---	13.0	---	20.0	17.0	---
MONTH	8.5	2.5	0.0	0.0	0.0	2.0	8.5	13.0	14.5	20.0	19.0	15.0

YEAR MAX 23.0 MIN 0.0 MEAN 8.5

06279500 BIGHORN RIVER AT KANE, WY--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM
OCT											
02...	1800	14.0	1780	146	702	--	--	--	--	--	--
MAR											
09...	1700	6.0	2300	564	3500	34	54	84	91	100	--
JUN											
07...	1730	17.5	5730	1670	25800	19	30	62	79	94	100
AUG											
11...	1300	21.5	1270	242	830	--	--	--	--	--	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	NUMBER OF SAMPLING POINTS	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM
MAR								
09...	1700	2300	6.0	4	1	1	2	22
JUN								
07...	1730	5730	17.5	4	0	1	6	21
AUG								
11...	1300	1270	21.5	5	0	1	6	13

DATE	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
MAR							
09...	55	59	61	65	71	100	--
JUN							
07...	29	32	36	45	62	100	--
AUG							
11...	16	17	21	32	54	89	100

06285100 SHOSHONE RIVER NEAR LOVELL, WY

LOCATION.--Lat 44°50'20", long 108°26'00", in NW¼NW¼ sec.16, T.56 N., R.96 W., Big Horn County, Hydrologic Unit 10080014, on right bank 30 ft (9 m) upstream from bridge on U.S. Highway 310 and 1.5 mi (2.4 km) west of Lovell.

DRAINAGE AREA.--2,350 mi^2 (6,090 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,850 ft (1,173 m), from topographic map.

REMARKS.--Water-discharge records good except those for December to April, which are poor. No gage-height record Jan. 8 to Feb. 7, Mar. 19 to Apr. 25. Flow regulated by Buffalo Bill Reservoir. Natural flow of stream affected by storage reservoirs, power development, diversions above station for irrigation of about 143,000 acres (579 km^2), of which about 8,000 acres (32.4 km^2) lies below station, and return flow from irrigated areas.

AVERAGE DISCHARGE.--10 years, 1,110 ft^3/s (31.44 m^3/s), 804,200 acre-ft/yr (992 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,400 ft^3/s (379 m^3/s) July 1, 1967, gage height, 6.49 ft (1.978 m); maximum gage height, 8.09 ft (2.466 m) Feb. 3, 1972 (backwater from ice); minimum daily discharge, 195 ft^3/s (5.52 m^3/s) May 4, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,080 ft^3/s (200 m^3/s) June 14, gage height, 4.45 ft (1.356 m); minimum daily, 541 ft^3/s (15.3 m^3/s) Aug. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	684	1200	800	900	600	847	900	2450	1860	1180	1060	780
2	684	1160	991	950	600	764	900	2370	1820	1130	1450	780
3	668	1160	1130	1000	600	880	900	2240	1660	1140	1570	732
4	660	760	1040	1050	600	890	900	2100	1650	1140	1590	764
5	639	732	982	1050	900	850	900	2020	1800	1140	1520	829
6	653	708	928	700	850	880	900	2020	1940	973	1610	883
7	684	684	928	550	750	880	900	2020	2300	901	1550	955
8	804	668	919	600	716	880	900	1910	3620	856	1450	955
9	804	653	964	650	883	850	850	1860	3870	820	1370	946
10	865	646	982	650	892	973	850	1860	3910	1050	1220	847
11	764	646	973	600	892	1060	1100	1750	4030	1430	1250	856
12	764	632	964	600	955	804	2300	1690	4250	2830	1010	955
13	1100	646	937	600	982	946	2400	1610	4170	3510	946	1080
14	1160	676	812	600	973	937	2200	1600	5690	3620	928	982
15	1120	684	800	600	892	910	2100	1700	4370	3290	928	919
16	1100	684	900	600	865	919	2200	1720	4390	3000	937	892
17	1120	684	1000	700	883	1020	2200	1730	4430	2730	764	901
18	1160	676	1000	700	874	1140	2200	1570	4330	2510	716	982
19	1140	653	950	600	847	1050	2100	1560	4310	2450	724	1020
20	1160	639	950	600	883	970	2200	1480	4290	2240	740	982
21	1010	660	950	600	838	900	2650	1490	4290	2000	724	973
22	1000	660	950	600	838	900	2500	1480	4310	1760	756	796
23	1510	660	950	600	838	940	2250	1500	4210	1540	748	780
24	1310	660	900	600	838	940	2200	1620	4170	1430	676	804
25	1250	660	900	600	847	960	2200	1660	4070	1330	639	796
26	1240	660	900	600	892	920	3020	1720	4030	1340	541	847
27	1230	660	900	600	991	890	3130	1730	3910	1300	569	955
28	1110	660	900	600	910	830	3020	1760	3490	1070	604	892
29	1100	660	900	600	874	900	2730	1790	1440	919	611	883
30	1100	660	900	600	---	900	2710	1860	1250	838	724	919
31	1170	---	900	600	---	900	---	1960	---	865	756	---
TOTAL	30763	21591	29000	20900	24303	28430	56310	55830	103860	52332	30681	26685
MEAN	992	720	935	674	838	917	1877	1801	3462	1688	990	890
MAX	1510	1200	1130	1050	991	1140	3130	2450	5690	3620	1610	1080
MIN	639	632	800	550	600	764	850	1480	1250	820	541	732
AC-FT	61020	42830	57520	41460	48200	56390	111700	110700	206000	103800	60860	52930

CAL YR 1975 TOTAL 438815 MEAN 1202 MAX 6730 MIN 478 AC-FT 870400
WTR YR 1976 TOTAL 480685 MEAN 1313 MAX 5690 MIN 541 AC-FT 953400

06285100 SHOSHONE RIVER NEAR LOVELL, WY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1966 to current year.
WATER TEMPERATURES: October 1966 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,360 micromhos July 21, 1968; minimum daily, 238 micromhos June 26, 1974.
WATER TEMPERATURES: Maximum, 30.0°C June 6, 1969; minimum, 0.0°C on many days during winter period most years.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum observed, 1,050 micromhos Nov. 9; minimum daily, 285 micromhos July 14.
WATER TEMPERATURES: Maximum 25.0°C July 6; minimum, 1.0°C on many days during November to March.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE (DEG C)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
OCT												
05...	1300	660	800	--	250	75	64	23	76	2.1	3.7	219
NOV												
09...	1315	639	1050	--	370	140	99	30	88	2.0	4.7	279
DEC												
08...	1400	910	940	--	280	89	76	23	78	2.0	3.8	238
JAN												
11...	1400	A600	930	--	340	120	92	27	68	1.6	4.8	273
FEB												
08...	1300	820	480	--	260	74	71	20	49	1.3	4.1	226
MAR												
09...	1300	820	750	5.0	260	72	71	21	59	1.6	3.8	234
APR												
11...	1230	A1100	630	11.5	210	47	56	16	47	1.4	3.5	193
MAY												
09...	0915	1870	480	12.5	160	28	42	14	47	1.6	3.4	164
JUN												
14...	1030	7000	420	8.0	86	1	23	6.9	56	2.6	2.9	104
JUL												
12...	1145	2970	340	18.5	120	19	31	9.2	29	1.2	2.1	118
AUG												
08...	1030	1480	600	17.0	200	57	53	16	53	1.6	2.8	172
SEP												
05...	1030	829	780	16.0	250	84	66	21	71	2.0	3.6	204

A Daily mean discharge.

DATE	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)
OCT												
05...	180	220	7.2	.5	12	517	.70	921	.47	--	.01	150
NOV												
09...	229	310	12	.6	14	699	.95	1210	.75	--	.00	180
DEC												
08...	195	230	8.1	.5	15	555	.75	1360	.63	--	.01	200
JAN												
11...	224	250	11	.6	15	606	.82	982	.70	--	.02	170
FEB												
08...	185	180	8.2	.5	14	461	.63	1020	.56	.20	.01	--
MAR												
09...	192	200	8.1	.5	13	493	.67	1090	.37	.22	.00	--
APR												
11...	158	150	5.5	.4	13	387	.53	1150	.19	.33	.01	--
MAY												
09...	135	120	5.3	.3	14	329	.45	1660	.43	.17	.02	--
JUN												
14...	85	120	4.5	.3	11	280	.38	5290	.98	.07	.00	--
JUL												
12...	97	82	3.7	.2	15	232	.32	1860	.45	.20	.02	--
AUG												
08...	141	150	6.3	.4	15	385	.52	1540	.92	.12	.01	--
SEP												
05...	167	200	25	.5	14	507	.69	1130	1.1	.04	.01	--

06285100 SHOSHONE RIVER NEAR LOVELL, WY

LOCATION.--Lat 44°50'20", long 108°26'00", in NW¼NW¼ sec.16, T.56 N., R.96 W., Big Horn County, Hydrologic Unit 10080014, on right bank 30 ft (9 m) upstream from bridge on U.S. Highway 310 and 1.5 mi (2.4 km) west of Lovell.

DRAINAGE AREA.--2,350 mi^2 (6,090 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,850 ft (1,173 m), from topographic map.

REMARKS.--Water-discharge records good except those for December to April, which are poor. No gage-height record Jan. 8 to Feb. 7, Mar. 19 to Apr. 25. Flow regulated by Buffalo Bill Reservoir. Natural flow of stream affected by storage reservoirs, power development, diversions above station for irrigation of about 143,000 acres (579 km^2), of which about 8,000 acres (32.4 km^2) lies below station, and return flow from irrigated areas.

AVERAGE DISCHARGE.--10 years, 1,110 ft^3/s (31.44 m^3/s), 804,200 acre-ft/yr (992 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,400 ft^3/s (379 m^3/s) July 1, 1967, gage height, 6.49 ft (1.978 m); maximum gage height, 8.09 ft (2.466 m) Feb. 3, 1972 (backwater from ice); minimum daily discharge, 195 ft^3/s (5.52 m^3/s) May 4, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,080 ft^3/s (200 m^3/s) June 14, gage height, 4.45 ft (1.356 m); minimum daily, 541 ft^3/s (15.3 m^3/s) Aug. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	684	1200	800	900	600	847	900	2450	1860	1180	1060	780
2	684	1160	991	950	600	764	900	2370	1820	1130	1450	780
3	668	1160	1130	1000	600	880	900	2240	1660	1140	1570	732
4	660	760	1040	1050	600	890	900	2100	1650	1140	1590	764
5	639	732	982	1050	900	850	900	2020	1800	1140	1520	829
6	653	708	928	700	850	880	900	2020	1940	973	1610	883
7	684	684	928	550	750	880	900	2020	2300	901	1550	955
8	804	668	919	600	716	880	900	1910	3620	856	1450	955
9	804	653	964	650	883	850	850	1860	3870	820	1370	946
10	865	646	982	650	892	973	850	1860	3910	1050	1220	847
11	764	646	973	600	892	1060	1100	1750	4030	1430	1250	856
12	764	632	964	600	955	804	2300	1690	4250	2830	1010	955
13	1100	646	937	600	982	946	2400	1610	4170	3510	946	1080
14	1160	676	812	600	973	937	2200	1600	5690	3620	928	982
15	1120	684	800	600	892	910	2100	1700	4370	3290	928	919
16	1100	684	900	600	865	919	2200	1720	4390	3000	937	892
17	1120	684	1000	700	883	1020	2200	1730	4430	2730	764	901
18	1160	676	1000	700	874	1140	2200	1570	4330	2510	716	982
19	1140	653	950	600	847	1050	2100	1560	4310	2450	724	1020
20	1160	639	950	600	883	970	2200	1480	4290	2240	740	982
21	1010	660	950	600	838	900	2650	1490	4290	2000	724	973
22	1000	660	950	600	838	900	2500	1480	4310	1760	756	796
23	1510	660	950	600	838	940	2250	1500	4210	1540	748	780
24	1310	660	900	600	838	940	2200	1520	4170	1430	676	804
25	1250	660	900	600	847	960	2200	1660	4070	1330	639	796
26	1240	660	900	600	892	920	3020	1720	4030	1340	541	847
27	1230	660	900	600	991	890	3130	1730	3910	1300	569	955
28	1110	660	900	600	910	830	3020	1760	3490	1070	604	892
29	1100	660	900	600	874	900	2730	1790	1440	919	611	883
30	1100	660	900	600	---	900	2710	1860	1250	838	724	919
31	1170	---	900	600	---	900	---	1960	---	865	756	---
TOTAL	30763	21591	29000	20900	24303	28430	56310	55830	103860	52332	30681	26685
MEAN	992	720	935	674	838	917	1877	1801	3462	1688	990	890
MAX	1510	1200	1130	1050	991	1140	3130	2450	5690	3620	1610	1080
MIN	639	632	800	550	600	764	850	1480	1250	820	541	732
AC-FT	61020	42830	57520	41460	48200	56390	111700	110700	206000	103800	60860	52930

CAL YR 1975 TOTAL 438815 MEAN 1202 MAX 6730 MIN 478 AC-FT 870400
WTR YR 1976 TOTAL 480685 MEAN 1313 MAX 5690 MIN 541 AC-FT 953400

06285100 SHOSHONE RIVER NEAR LOVELL, WY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1966 to current year.
WATER TEMPERATURES: October 1966 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,360 micromhos July 21, 1968; minimum daily, 238 micromhos June 26, 1974.
WATER TEMPERATURES: Maximum, 30.0°C June 6, 1969; minimum, 0.0°C on many days during winter period most years.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum observed, 1,050 micromhos Nov. 9; minimum daily, 285 micromhos July 14.
WATER TEMPERATURES: Maximum 25.0°C July 6; minimum, 1.0°C on many days during November to March.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE (DEG C)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
OCT												
05...	1300	660	800	--	250	75	64	23	76	2.1	3.7	219
NOV												
09...	1315	639	1050	--	370	140	99	30	88	2.0	4.7	279
DEC												
08...	1400	910	940	--	280	89	76	23	78	2.0	3.8	238
JAN												
11...	1400	A600	930	--	340	120	92	27	68	1.6	4.8	273
FEB												
08...	1300	820	480	--	260	74	71	20	49	1.3	4.1	226
MAR												
09...	1300	820	750	5.0	260	72	71	21	59	1.6	3.8	234
APR												
11...	1230	A1100	630	11.5	210	47	56	16	47	1.4	3.5	193
MAY												
09...	0915	1870	480	12.5	160	28	42	14	47	1.6	3.4	164
JUN												
14...	1030	7000	420	8.0	86	1	23	6.9	56	2.6	2.9	104
JUL												
12...	1145	2970	340	18.5	120	19	31	9.2	29	1.2	2.1	118
AUG												
08...	1030	1480	600	17.0	200	57	53	16	53	1.6	2.8	172
SEP												
05...	1030	829	780	16.0	250	84	66	21	71	2.0	3.6	204

A Daily mean discharge.

DATE	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)
OCT												
05...	180	220	7.2	.5	12	517	.70	921	.47	--	.01	150
NOV												
09...	229	310	12	.6	14	699	.95	1210	.75	--	.00	180
DEC												
08...	195	230	8.1	.5	15	555	.75	1360	.63	--	.01	200
JAN												
11...	224	250	11	.6	15	606	.82	982	.70	--	.02	170
FEB												
08...	185	180	8.2	.5	14	461	.63	1020	.56	.20	.01	--
MAR												
09...	192	200	8.1	.5	13	493	.67	1090	.37	.22	.00	--
APR												
11...	158	150	5.5	.4	13	387	.53	1150	.19	.33	.01	--
MAY												
09...	135	120	5.3	.3	14	329	.45	1660	.43	.17	.02	--
JUN												
14...	85	120	4.5	.3	11	280	.38	5290	.98	.07	.00	--
JUL												
12...	97	82	3.7	.2	15	232	.32	1850	.45	.20	.02	--
AUG												
08...	141	150	6.3	.4	15	385	.52	1540	.92	.12	.01	--
SEP												
05...	167	200	25	.5	14	507	.69	1130	1.1	.04	.01	--

06285100 SHOSHONE RIVER NEAR LOVELL, WY

LOCATION.--Lat 44°50'20", long 108°26'00", in NW¼NW¼ sec.16, T.56 N., R.96 W., Big Horn County, Hydrologic Unit 10080014, on right bank 30 ft (9 m) upstream from bridge on U.S. Highway 310 and 1.5 mi (2.4 km) west of Lovell.

DRAINAGE AREA.--2,350 mi² (6,090 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,850 ft (1,173 m), from topographic map.

REMARKS.--Water-discharge records good except those for December to April, which are poor. No gage-height record Jan. 8 to Feb. 7, Mar. 19 to Apr. 25. Flow regulated by Buffalo Bill Reservoir. Natural flow of stream affected by storage reservoirs, power development, diversions above station for irrigation of about 143,000 acres (579 km²), of which about 8,000 acres (32.4 km²) lies below station, and return flow from irrigated areas.

AVERAGE DISCHARGE.--10 years, 1,110 ft³/s (31.44 m³/s), 804,200 acre-ft/yr (992 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,400 ft³/s (379 m³/s) July 1, 1967, gage height, 6.49 ft (1.978 m); maximum gage height, 8.09 ft (2.466 m) Feb. 3, 1972 (backwater from ice); minimum daily discharge, 195 ft³/s (5.52 m³/s) May 4, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,080 ft³/s (200 m³/s) June 14, gage height, 4.45 ft (1.356 m); minimum daily, 541 ft³/s (15.3 m³/s) Aug. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	684	1200	800	900	600	847	900	2450	1860	1180	1060	780
2	684	1160	991	950	600	764	900	2370	1820	1130	1450	780
3	668	1160	1130	1000	600	880	900	2240	1660	1140	1570	732
4	660	760	1040	1050	600	890	900	2100	1650	1140	1590	764
5	639	732	982	1050	900	850	900	2020	1800	1140	1520	829
6	653	708	928	700	850	880	900	2020	1940	973	1610	883
7	684	684	928	550	750	880	900	2020	2300	901	1550	955
8	804	668	919	600	716	880	900	1910	3620	856	1450	955
9	804	653	964	650	883	850	850	1860	3870	820	1370	946
10	865	646	982	650	892	973	850	1860	3910	1050	1220	847
11	764	646	973	600	892	1060	1100	1750	4030	1430	1250	856
12	764	632	964	600	955	804	2300	1690	4250	2830	1010	955
13	1100	646	937	600	982	946	2400	1610	4170	3510	946	1080
14	1160	676	812	600	973	937	2200	1600	5690	3620	928	982
15	1120	684	800	600	892	910	2100	1700	4370	3290	928	919
16	1100	684	900	600	865	919	2200	1720	4390	3000	937	892
17	1120	684	1000	700	883	1020	2200	1730	4430	2730	764	901
18	1160	676	1000	700	874	1140	2200	1570	4330	2510	716	982
19	1140	653	950	600	847	1050	2100	1560	4310	2450	724	1020
20	1160	639	950	600	883	970	2200	1480	4290	2240	740	982
21	1010	660	950	600	838	900	2650	1490	4290	2000	724	973
22	1000	660	950	600	838	900	2500	1480	4310	1760	756	796
23	1510	660	950	600	838	940	2250	1500	4210	1540	748	780
24	1310	660	900	600	838	940	2200	1620	4170	1430	676	804
25	1250	660	900	600	847	960	2200	1660	4070	1330	639	796
26	1240	660	900	600	892	920	3020	1720	4030	1340	541	847
27	1230	660	900	600	991	890	3130	1730	3910	1300	569	955
28	1110	660	900	600	910	830	3020	1760	3490	1070	604	892
29	1100	660	900	600	874	900	2730	1790	1440	919	611	883
30	1100	660	900	600	---	900	2710	1860	1250	838	724	919
31	1170	---	900	600	---	900	---	1960	---	865	756	---
TOTAL	30763	21591	29000	20900	24303	28430	56310	55830	103860	52332	30681	26685
MEAN	992	720	935	674	838	917	1877	1801	3462	1688	990	890
MAX	1510	1200	1130	1050	991	1140	3130	2450	5690	3620	1610	1080
MIN	639	632	800	550	600	764	850	1480	1250	820	541	732
AC-FT	61020	42830	57520	41460	48200	56390	111700	110700	206000	103800	60860	52930

CAL YR 1975 TOTAL 438815 MEAN 1202 MAX 6730 MIN 478 AC-FT 870400
WTR YR 1976 TOTAL 480685 MEAN 1313 MAX 5690 MIN 541 AC-FT 953400

06285100 SHOSHONE RIVER NEAR LOVELL, WY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1966 to current year.
WATER TEMPERATURES: October 1966 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,360 micromhos July 21, 1968; minimum daily, 238 micromhos June 26, 1974.
WATER TEMPERATURES: Maximum, 30.0°C June 6, 1969; minimum, 0.0°C on many days during winter period most years.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum observed, 1,050 micromhos Nov. 9; minimum daily, 285 micromhos July 14.
WATER TEMPERATURES: Maximum 25.0°C July 6; minimum, 1.0°C on many days during November to March.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE (DEG C)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
OCT												
05...	1300	660	800	--	250	75	64	23	76	2.1	3.7	219
NOV												
09...	1315	639	1050	--	370	140	99	30	88	2.0	4.7	279
DEC												
08...	1400	910	940	--	280	89	76	23	78	2.0	3.8	238
JAN												
11...	1400	A600	930	--	340	120	92	27	68	1.6	4.8	273
FEB												
08...	1300	820	480	--	260	74	71	20	49	1.3	4.1	226
MAR												
09...	1300	820	750	5.0	260	72	71	21	59	1.6	3.8	234
APR												
11...	1230	A1100	630	11.5	210	47	56	16	47	1.4	3.5	193
MAY												
09...	0915	1870	480	12.5	160	28	42	14	47	1.6	3.4	164
JUN												
14...	1030	7000	420	8.0	86	1	23	6.9	56	2.6	2.9	104
JUL												
12...	1145	2970	340	18.5	120	19	31	9.2	29	1.2	2.1	118
AUG												
08...	1030	1480	600	17.0	200	57	53	16	53	1.6	2.8	172
SEP												
05...	1030	829	780	16.0	250	84	66	21	71	2.0	3.6	204

A Daily mean discharge.

DATE	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)
OCT												
05...	180	220	7.2	.5	12	517	.70	921	.47	--	.01	150
NOV												
09...	229	310	12	.6	14	699	.95	1210	.75	--	.00	180
DEC												
08...	195	230	8.1	.5	15	555	.75	1360	.63	--	.01	200
JAN												
11...	224	250	11	.6	15	606	.82	982	.70	--	.02	170
FEB												
08...	185	180	8.2	.5	14	461	.63	1020	.56	.20	.01	--
MAR												
09...	192	200	8.1	.5	13	493	.67	1090	.37	.22	.00	--
APR												
11...	158	150	5.5	.4	13	387	.53	1150	.19	.33	.01	--
MAY												
09...	135	120	5.3	.3	14	329	.45	1660	.43	.17	.02	--
JUN												
14...	85	120	4.5	.3	11	280	.38	5290	.98	.07	.00	--
JUL												
12...	97	82	3.7	.2	15	232	.32	1850	.45	.20	.02	--
AUG												
08...	141	150	6.3	.4	15	385	.52	1540	.92	.12	.01	--
SEP												
05...	167	200	25	.5	14	507	.69	1130	1.1	.04	.01	--

06285100 SHOSHONE RIVER NEAR LOVELL, WY--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	760	784	895	781	927	709	711	508	450	485	608	709
2	766	804	892	881	729	705	718	479	448	490	603	714
3	777	845	850	787	718	705	711	480	457	495	580	708
4	773	791	813	880	718	701	727	477	473	500	572	706
5	759	964	809	894	718	703	727	475	449	505	584	686
6	786	983	779	904	718	700	718	464	446	514	551	703
7	769	1000	781	894	705	720	715	459	457	520	576	703
8	787	1010	781	899	724	737	718	480	365	522	549	693
9	826	1000	778	892	729	737	739	484	348	515	540	672
10	787	1000	895	901	724	753	726	440	327	485	565	696
11	788	1000	764	902	730	712	580	493	318	418	566	705
12	797	968	878	901	730	681	444	478	349	331	626	710
13	820	981	819	901	735	690	433	440	319	288	644	716
14	804	981	---	999	730	732	433	441	432	285	646	719
15	797	989	---	919	690	740	437	475	362	299	636	713
16	768	1000	---	958	685	740	468	465	342	324	627	717
17	744	1010	---	899	691	781	464	464	311	344	686	709
18	732	1010	---	939	683	751	440	481	315	363	685	707
19	738	991	---	946	688	751	433	498	309	364	687	717
20	728	1020	---	919	688	709	432	488	295	393	690	727
21	732	954	---	911	682	717	421	481	296	404	674	756
22	799	972	---	924	689	722	426	477	350	436	678	764
23	771	972	798	936	690	730	433	477	328	469	676	798
24	771	983	984	928	695	698	428	480	302	487	698	784
25	791	983	978	932	700	703	436	470	300	489	718	795
26	787	1000	1030	932	703	708	428	474	287	499	779	779
27	814	1030	867	919	709	703	495	461	293	540	756	763
28	809	1040	1020	934	709	721	497	461	300	555	717	771
29	798	1040	933	831	710	694	502	462	438	591	726	723
30	793	1040	910	925	---	722	513	456	461	621	696	739
31	797	---	950	831	---	711	---	452	---	610	701	---
MONTH	780	972	---	903	715	719	545	472	364	456	646	727

YEAR MAX 1040 MIN 285 MEAN 676

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	9.0	2.0	1.0	5.0	1.0	10.0	12.0	16.0	21.0	20.0	16.0
2	15.0	11.0	2.0	1.0	4.0	2.0	8.0	12.0	16.0	21.0	17.0	16.0
3	13.0	9.0	6.0	1.0	4.0	2.0	9.0	13.0	18.0	22.0	20.0	16.0
4	14.0	9.0	6.0	1.0	3.0	2.0	9.0	12.0	18.0	23.0	18.0	15.0
5	15.0	9.0	5.0	1.0	1.0	2.0	12.0	11.0	17.0	24.0	18.0	15.0
6	15.0	9.0	4.0	1.0	1.0	3.0	12.0	13.0	16.0	25.0	21.0	15.0
7	14.0	9.0	5.0	1.0	1.0	4.0	12.0	13.0	18.0	23.0	20.0	12.0
8	10.0	8.0	5.0	1.0	2.0	6.0	13.0	15.0	15.0	23.0	20.0	12.0
9	12.0	7.0	5.0	1.0	2.0	6.0	12.0	15.0	16.0	23.0	20.0	12.0
10	11.0	5.0	6.0	2.0	3.0	7.0	11.0	15.0	15.0	23.0	20.0	12.0
11	13.0	5.0	4.0	1.0	3.0	4.0	13.0	12.0	13.0	22.0	19.0	12.0
12	11.0	2.0	3.0	2.0	3.0	2.0	12.0	14.0	13.0	21.0	20.0	12.0
13	9.0	5.0	2.0	1.0	5.0	2.0	11.0	15.0	13.0	21.0	20.0	13.0
14	7.0	5.0	---	1.0	5.0	5.0	12.0	17.0	8.0	19.0	21.0	12.0
15	9.0	5.0	---	2.0	2.0	6.0	12.0	12.0	13.0	18.0	20.0	12.0
16	11.0	8.0	---	2.0	2.0	6.0	9.0	14.0	11.0	19.0	18.0	15.0
17	10.0	6.0	---	4.0	3.0	9.0	8.0	16.0	13.0	19.0	18.0	15.0
18	11.0	4.0	---	4.0	3.0	9.0	10.0	16.0	14.0	21.0	18.0	13.0
19	12.0	3.0	---	4.0	3.0	6.0	10.0	17.0	15.0	20.0	18.0	10.0
20	11.0	1.0	---	4.0	3.0	5.0	10.0	17.0	14.0	20.0	17.0	15.0
21	10.0	1.0	---	3.0	3.0	6.0	11.0	17.0	16.0	20.0	17.0	13.0
22	7.0	4.0	---	3.0	3.0	7.0	12.0	14.0	15.0	20.0	17.0	13.0
23	5.0	3.0	1.0	3.0	3.0	6.0	10.0	16.0	15.0	22.0	17.0	13.0
24	6.0	3.0	4.0	3.0	3.0	7.0	11.0	16.0	16.0	22.0	17.0	13.0
25	6.0	1.0	4.0	4.0	3.0	9.0	9.0	16.0	14.0	22.0	17.0	12.0
26	8.0	1.0	4.0	4.0	3.0	8.0	6.0	17.0	14.0	21.0	12.5	10.0
27	7.0	1.0	2.0	3.0	3.0	7.0	6.0	17.0	16.0	21.0	11.5	11.0
28	7.0	1.0	3.0	3.0	3.0	7.0	6.0	17.0	16.0	22.0	15.0	11.0
29	8.0	1.0	2.0	3.0	3.0	7.0	8.0	15.0	20.0	21.0	14.0	12.0
30	9.0	1.0	1.0	3.0	---	7.0	11.0	15.0	21.0	21.0	14.0	15.0
31	11.0	---	1.0	5.0	---	9.0	---	16.0	---	21.0	16.0	---
MONTH	10.5	5.0	---	2.5	3.0	5.5	10.0	14.5	15.0	21.5	18.0	13.0

YEAR MAX 25.0 MIN 1.0 MEAN 10.5

06285100 SHOSHONE RIVER NEAR LOVELL, WY--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM
OCT											
02...	1240	11.5	684	28	52	--	--	--	--	--	--
NOV											
04...	1700	9.5	708	80	153	--	--	--	--	--	--
DEC											
03...	1230	4.0	1120	2020	6110	79	99	100	--	--	--
FEB											
12...	1500	1.0	928	284	712	--	--	--	--	--	--
MAR											
09...	1330	5.5	820	261	578	--	--	--	--	--	--
APR											
09...	1145	11.0	829	227	508	--	--	--	--	--	--
MAY											
05...	1530	8.5	1970	484	2570	--	--	--	--	--	--
JUN											
02...	1720	16.0	1760	253	1200	--	--	--	--	--	--
14...	1830	9.0	4980	6060	81500	48	69	90	96	99	100
JUL											
13...	1130	16.0	3580	650	6280	16	26	54	72	92	100
AUG											
04...	1500	19.0	1640	683	3020	--	--	--	--	--	--
SEP											
07...	1545	16.5	1000	90	243	--	--	--	--	--	--

06286258 BIG COULEE NEAR LOVELL, WY

LOCATION.--Lat 44°58'04", long 108°17'24", in SE¼NE¼NE¼ sec.34, T.58 N., R.95 W., Big Horn County, Hydrologic Unit 10080010, on right bank 300 ft (91 m) downstream from county road, 0.6 mi (1.0 km) upstream from mouth and 10 mi (16 km) northeast of Lovell.

DRAINAGE AREA.--30.1 mi^2 (78.0 km^2). Area at site used Aug. 31, 1972 to Apr. 23, 1974, 28.8 mi^2 (74.6 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1970 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,750 ft (1,143 m), from topographic map. Aug. 31, 1972, to Apr. 23, 1974, water-stage recorder at site 0.7 mi (1.1 km) upstream at different datum.

REMARKS.--Water-discharge records fair.

AVERAGE DISCHARGE.--6 years, 0.102 ft^3/s (2.89 dm^3/s), 74 acre-ft/yr (91,200 m^3/s).

EXTREMES FOR PERIOD OF RECORE.--Maximum discharge, 1,840 ft^3/s (52.1 m^3/s) July 5, 1975, gage height, 5.54 ft (1.689 m), from rating curve extended above 17 ft^3/s (0.48 m^3/s) on basis of slope-area measurements at gage heights 3.60 ft (1.097 m), 4.66 ft (1.420 m), and 5.54 ft (1.689 m); no flow most of each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 10 ft^3/s (0.28 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
June 11	1500	*1020	28.9	a4.6	1.40	Aug. 30	1800	45	1.27	2.44	0.744
Aug. 2	1830	44	1.25	2.43	0.741						

a From floodmarks.

No flow most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					0				0		0	0
2					0				0		2.9	0
3					0				0		0	0
4					0				0		0	0
5					0				0		0	0
6					0				0		0	0
7					0				0		0	0
8					0				0		0	0
9					.10				0		0	0
10					.20				0		0	0
11					.10				30		0	0
12					.81				0		0	0
13					.50				0		0	0
14					.20				0		0	0
15					0				0		0	0
16					0				0		0	0
17					0				0		0	0
18					0				0		0	.33
19					0				0		0	0
20					0				0		0	0
21					0				0		0	0
22					0				0		0	0
23					0				0		0	0
24					0				0		0	0
25					0				0		0	0
26					0				0		0	.08
27					0				0		0	0
28					0				0		0	0
29					0				0		0	0
30					---				0		.80	0
31		---			---		---		---		0	---
TOTAL	0	0	0	0	1.91	0	0	0	30	0	3.70	.41
MEAN	0	0	0	0	.066	0	0	0	1.00	0	.12	.014
MAX	0	0	0	0	.81	0	0	0	30	0	2.9	.33
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	0	0	0	0	3.8	0	0	0	60	0	7.3	.8

CAL YR 1975 TOTAL 82.95 MEAN .23 MAX 73 MIN 0 AC-FT 165
WTR YR 1976 TOTAL 36.02 MEAN .098 MAX 30 MIN 0 AC-FT 71

06286258 BIG COULEE NEAR LOVELL, WY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1970 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: April 1970 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily, not determined; minimum daily, no flow for many days each year.
SEDIMENT DISCHARGE: Maximum daily, 57,100 tons (51,800 tonnes) July 5, 1975; minimum daily, 0 tons on many days each year.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily, not determined; minimum daily, no flow for many days during year.
SEDIMENT DISCHARGE: Maximum daily, 8,930 tons (8,100 tonnes) June 11; minimum daily, 0 tons on many days during year.

MONTHLY AND ANNUAL SUMMARY OF WATER AND SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

MONTH	DISCHARGE (CFS-DAYS)	RUNOFF (ACRE-FEET)	SUSPENDED SEDIMENT DISCHARGE (TONS)	DAILY DISCHARGE (TONS) MEAN	MAXIMUM	MINIMUM	CONCENTRATION (MG/L) WEIGHTED MEAN	MAXIMUM OBSERVED
OCTOBER 1975...	0	0	0	0	0	0		
NOVEMBER.....	0	0	0	0	0	0		
DECEMBER.....	0	0	0	0	0	0		
JANUARY 1976...	0	0	0	0	0	0		
FEBRUARY.....	1.91	3.8	5.44	.19	4.6	0		
MARCH.....	0	0	0	0	0	0		
APRIL.....	0	0	0	0	0	0		
MAY.....	0	0	0	0	0	0		
JUNE.....	30	60	8,930	298	8,930	0		
JULY.....	0	0	0	0	0	0		
AUGUST.....	3.70	7.3	593	19	507	0		
SEPTEMBER.....	.41	.81	8.1	.27	4.6	0		
WATER YEAR...	36.02	71.91	9,536.54	26	8,930	0		

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM
FEB 12...	1715	--	A.81	7530	16	28	46	78	94	100
JUN 11...	1710	14.5	9.9	21200	567	44	86	99	100	--

A Daily mean discharge.

06286400 BIGHORN LAKE NEAR ST. XAVIER, MT

LOCATION.--Lat 45°18'27", long 107°57'26", in SW¼SE¼ sec.18, T.6 S., R.31 E., Big Horn County, Hydrologic Unit 10080010, in block 13 of Yellowtail Dam on Bighorn River, 1.3 mi (2.1 km) upstream from Grapevine Creek, 15.5 mi (24.9 km) southeast of St. Xavier, and at mile 81.0 (130.3 km).

DRAINAGE AREA.--19,626 mi^2 (50,831 km^2).

PERIOD OF RECORD.--November 1965 to current year (monthend contents only). Prior to October 1969, published as "Yellowtail Reservoir." Records of daily elevations and contents on file in Helena district office.

GAGE.--Water-stage recorder in powerhouse control room. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

REMARKS.--Reservoir is formed by thin concrete-arch dam; construction began in 1961; completed in 1967. Storage began Nov. 3, 1965. Usable capacity, 1,356,000 acre-ft (1.67 km^3) between elevation 3,296.50 ft (1,004.773 m), river outlet invert, and 3,657.00 ft (1,114.654 m), top of flood control. Elevation of spillway crest, 3,593.00 ft (1,095.146 m). Normal maximum operating level, 1,097,000 acre-ft (1.35 km^3), elevation, 3,640.00 ft (1,109.472 m). Minimum operating level, 483,400 acre-ft (596 hm^3), elevation, 3,547.00 ft (1,081.126 m). Dead storage, 18,970 acre-ft (23.4 hm^3) below elevation 3,296.50 ft (1,004.773 m). Figures given herein represent usable contents. Water is used for power production, flood control, irrigation, and recreation.

COOPERATION.--Elevations and capacity table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,346,000 acre-feet (1.66 km^3) July 6, 1967 (elevation, 3,656.43 ft or 1,114.480 m); minimum since first filling, 660,700 acre-feet (815 hm^3) Mar. 11, 1970 (elevation, 3,584.45 ft or 1,092.540 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,044,000 acre-ft (1.29 km^3) Oct. 31, Nov. 1, 5, 6; maximum elevation, 3,635.61 ft (1,108.134 m) Nov. 6; minimum contents, 742,000 acre-ft (915 hm^3) May 20, elevation, 3,598.35 ft (1,096.777 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	3,633.19	1,018,000	--
Oct. 31	3,635.59	1,044,000	+26,000
Nov. 30	3,628.15	966,000	-77,100
Dec. 31	3,622.29	914,800	-52,100
CAL YR 1975			+ 5,600
Jan. 31	3,616.35	868,400	-46,400
Feb. 29	3,612.57	835,900	-32,500
Mar. 31	3,604.82	784,400	-51,500
Apr. 30	3,602.89	771,400	-13,000
May 31	3,601.77	764,000	- 7,400
June 30	3,624.51	933,900	+169,900
July 31	3,626.61	952,600	+18,700
Aug. 31	3,630.07	985,400	+32,800
Sept. 30	3,633.28	1,019,000	+33,600
WTR YR 1976			+ 1,000

06287000 BIGHORN RIVER NEAR ST. XAVIER, MT

LOCATION.--Lat 45°19'00", long 107°55'05", in NW¼NE¼ sec.16, T.6 S., R.31 E., Big Horn County, Hydrologic Unit 10080015, on right bank 800 ft (244 m) downstream from Yellowtail afterbay dam, 1,500 ft (460 m) downstream from Lime Kiln Creek, and 14 mi (23 km) southwest of St. Xavier.

DRAINAGE AREA.--19,667 mi² (50,938 km²). Area at site used prior to Apr. 16, 1963, 19,626 mi² (50,831 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1934 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,100 ft (945 m) above mean sea level (levels by Bureau of Reclamation). Prior to Apr. 16, 1963, and June 13, 1964, to Mar. 31, 1965, water-stage recorder at site 1.2 mi (1.9 km) upstream at different datum. Apr. 16, 1963, to June 12, 1964, water-stage recorder at present site at present datum. Apr. 1, 1965, to July 31, 1966, water-stage recorder at site 1,300 ft (400 m) downstream at present datum.

REMARKS.--Water-discharge records good. Figures of discharge given herein are sum of river flow and flow of Bighorn Canal. Some regulation by 14 reservoirs in Wyoming with combined capacity of 1,400,000 acre-ft (1,726 hm²) and complete regulation by Bighorn Lake (see preceding page) since Nov. 3, 1965. Diversions for irrigation of about 375,000 acres (1,520 km²) above station.

AVERAGE DISCHARGE.--42 years, 3,618 ft³/s (102.5 m³/s), 2,621,000 acre-ft/yr (3.23 km³/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,400 ft³/s (1,060 m³/s) June 16, 1935; minimum observed, 49 ft³/s (1.39 m³/s) Mar. 29, 1966, result of discharge measurement (dam closure); minimum daily, 112 ft³/s (3.17 m³/s) Apr. 2, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,910 ft³/s (224 m³/s) June 2, gage height, 62.93 ft (19.181 m); minimum daily, 1,430 ft³/s (40.5 m³/s) Apr. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3240	3520	4480	4430	4100	4480	4880	5320	6040	5870	2690	2530
2	3330	4080	4480	4430	4100	4470	4880	5300	6080	4370	2680	2550
3	3310	4080	4470	4430	4100	4470	4880	5320	6080	3330	2680	2540
4	3340	4050	4480	4450	4100	4450	4700	5330	5490	3350	2670	2530
5	3320	2540	4060	4450	4100	4610	1730	5300	5480	3540	2650	2530
6	3330	2430	3440	3910	4140	4880	1430	5300	5990	4610	2650	2550
7	3320	3860	3450	3920	4320	4880	2820	5300	5940	4950	2650	2650
8	3310	4680	3580	3910	4310	4880	4220	5300	5920	4590	2660	2640
9	3290	4680	3580	3910	4400	4880	5240	5280	5930	4640	2660	2640
10	3290	4550	3080	4020	4450	4900	5200	5280	5940	4700	2660	2660
11	3290	4480	2750	4080	4410	4870	5260	5330	5970	4720	2660	2640
12	3290	4480	3310	4080	4450	4870	5260	5330	5900	4730	2660	2640
13	3280	4560	3610	4080	4520	4870	5260	5330	5970	4750	2690	2700
14	3280	4520	3630	4100	4500	4870	5240	5310	5820	4700	2700	2660
15	3290	4050	4110	4100	4400	4880	5260	5310	5900	4400	2700	2770
16	3120	3870	4410	4100	4400	4850	5260	5290	5910	3590	2690	2810
17	3080	4310	4410	4100	4500	4870	5240	5240	5880	3600	2720	2810
18	3090	4340	4410	4100	4500	4850	5220	5100	5910	3600	2660	2840
19	3090	4470	4410	4100	4500	4850	5220	4780	5910	3920	2540	2540
20	3090	4450	4410	4100	4500	4850	5240	4780	5910	3910	2520	2260
21	3090	4450	4410	4100	4500	4830	5220	4780	5910	3640	2530	2380
22	3090	4450	4310	4080	4500	4830	5240	4770	5840	3640	2520	2650
23	3090	4470	4160	4080	4500	4830	5200	4770	5810	3190	2520	2570
24	3090	4470	4470	4100	4480	4830	5220	5050	5790	2730	2600	2230
25	3090	4470	4450	4080	4470	4870	5220	5370	5810	2730	2670	2680
26	3100	4470	4450	4080	4470	4900	5200	5410	5790	2720	2700	2660
27	3100	4470	4450	4080	4470	4900	5320	5600	5770	2710	2600	2640
28	3100	4470	4450	4100	4470	4900	5320	5950	5770	2710	2570	2640
29	3100	4480	4450	4100	4480	4900	5320	5970	5800	2700	2550	2660
30	3100	4480	4450	4100	---	4880	5300	5990	5840	2700	2560	2710
31	1470	---	4450	4100	---	4880	---	5990	---	2690	2540	---
TOTAL	97400	126680	127060	127800	127140	149080	145000	164480	176130	118090	81550	78310
MEAN	3142	4223	4099	4123	4384	4809	4833	5306	5871	3809	2631	2610
MAX	3340	4680	4480	4450	4520	4900	5320	5990	6080	5870	2720	2840
MIN	1470	2430	2750	3910	4100	4450	1430	4770	5480	2690	2520	2230
AC-FT	193200	251300	252000	253500	252200	295700	287600	326200	349400	234200	161800	155300

CAL YR 1975 TOTAL 1698750 MEAN 4654 MAX 9230 MIN 1470 AC-FT 3369000
WTR YR 1976 TOTAL 1518720 MEAN 4150 MAX 6080 MIN 1430 AC-FT 3012000

06287000 BIGHORN RIVER NEAR ST. XAVIER, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1966 to current year.
WATER TEMPERATURES: December 1962 to current year.

INSTRUMENTATION.--Temperature recorder December 1962 to September 1974.

REMARKS.--Flow regulated since Nov. 3, 1965, by Bighorn Lake.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,180 micromhos on several days during 1966-67; minimum daily, 492 micromhos Aug. 28, 1971.
WATER TEMPERATURES: Maximum, 24.5°C on several days during 1963-65; minimum daily, 0.0°C on many days during winter periods most years prior to 1966; minimum, 1.0°C at times during winter months since regulation by Bighorn Lake.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 922 micromhos May 21; minimum daily, 544 micromhos Sept. 26, 27.
WATER TEMPERATURES: Maximum, 17.0°C Oct. 1; minimum, 2.0°C several days during February and March.

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE (DEG C)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
OCT												
31...	1430	376	798	12.5	260	100	68	22	65	1.8	3.3	190
NOV												
13...	1145	4560	770	9.5	250	95	65	21	67	1.8	3.4	187
DEC												
18...	1435	4440	779	7.0	260	110	69	22	66	1.8	3.7	188
JAN												
13...	1135	4080	757	3.5	260	110	68	22	65	1.8	3.7	188
FEB												
12...	0950	4380	795	2.0	260	100	66	23	65	1.8	3.5	192
MAR												
18...	1135	4850	835	3.5	290	120	75	24	68	1.8	3.5	206
APR												
06...	1300	1440	873	7.5	300	120	77	25	75	1.9	3.6	215
MAY												
03...	1100	5340	886	5.0	310	130	76	28	75	1.9	4.0	217
JUN												
10...	1730	5420	--	10.5	290	--	75	25	71	1.8	3.6	--
28...	1620	5510	757	15.0	240	93	65	20	68	1.9	3.2	185
AUG												
05...	1300	2330	623	16.0	220	89	57	18	57	1.7	2.9	155
SEP												
09...	1320	2270	591	16.0	200	76	52	16	51	1.6	2.8	146

DATE	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT												
31...	230	9.4	.4	9.3	503	.68	511	.32	.06	.05	10	30
NOV												
13...	230	9.4	.3	9.3	499	.68	6140	.29	.04	.01	0	0
DEC												
18...	230	8.3	.3	9.3	503	.68	6030	.34	.01	.00	20	0
JAN												
13...	220	8.4	.4	9.1	491	.67	5410	.36	.01	.00	20	5
FEB												
12...	240	8.6	.4	9.0	512	.70	6060	.48	.01	.00	0	0
MAR												
18...	250	9.2	.4	9.9	544	.74	7120	.55	.00	.00	20	30
APR												
06...	260	11	.4	10	570	.78	2220	.48	.00	.00	0	20
MAY												
03...	280	13	.4	9.2	594	.81	8560	.39	.00	.00	20	10
JUN												
10...	250	10	.4	9.5	--	--	--	--	.06	--	0	0
28...	220	9.4	.5	8.9	488	.66	7260	.36	.00	.02	30	10
AUG												
05...	190	7.2	.3	10	422	.57	2650	.58	--	.03	100	10
SEP												
09...	180	6.4	.3	11	394	.54	2420	.55	.02	.03	30	10

06287000 BIGHORN RIVER NEAR ST. XAVIER, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	752	737	721	790	710	819	841	908	868	715	---	597
2	753	756	731	771	740	830	848	908	---	720	599	589
3	758	751	722	784	739	832	849	912	871	696	618	585
4	760	761	727	757	765	835	848	919	858	707	590	605
5	759	772	---	---	769	839	854	912	860	701	599	595
6	768	768	755	750	779	832	861	911	854	679	618	588
7	770	770	779	---	763	832	850	919	850	681	592	588
8	779	---	795	787	746	824	847	---	841	683	600	584
9	768	799	768	759	749	824	842	912	840	674	599	579
10	763	801	750	742	751	828	842	915	831	678	605	585
11	765	791	809	723	751	829	848	910	830	656	592	574
12	769	782	831	726	757	829	850	916	830	644	597	579
13	---	731	---	730	751	811	851	919	822	652	593	577
14	769	753	839	730	---	818	851	919	806	643	584	572
15	741	770	---	719	757	830	854	---	---	643	582	571
16	734	777	---	721	761	812	851	919	813	649	603	565
17	744	795	809	722	761	810	860	910	801	647	589	569
18	751	781	770	722	763	805	866	917	---	639	579	564
19	755	768	769	729	768	811	866	920	800	636	599	552
20	749	786	767	728	778	813	865	919	801	627	---	557
21	751	791	751	728	788	817	865	922	787	638	588	559
22	762	778	779	729	771	819	868	919	770	629	581	552
23	755	773	790	728	771	821	868	919	775	621	585	---
24	760	752	797	730	780	821	---	912	770	---	581	552
25	739	---	770	739	780	821	872	912	768	628	592	557
26	720	752	774	742	785	826	872	911	761	627	585	544
27	741	760	748	738	781	---	880	916	755	605	579	544
28	741	774	780	738	789	828	881	916	744	611	594	553
29	729	767	768	738	805	831	880	916	748	618	588	569
30	729	---	748	739	---	833	878	911	731	621	592	579
31	802	---	768	741	---	825	---	909	---	604	---	---
MONTH	755	770	771	741	765	824	859	915	807	652	593	572

YEAR MAX 922 MIN 544 MEAN 752

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.0	12.0	8.5	4.5	3.5	2.0	4.0	5.0	7.5	14.5	---	16.5
2	16.5	12.0	9.0	4.5	4.0	2.0	3.0	5.0	---	14.5	15.0	15.0
3	16.0	12.0	9.0	4.5	3.0	2.0	4.0	5.5	8.0	14.5	15.0	16.0
4	15.5	12.0	9.0	5.0	2.5	2.5	4.0	5.0	8.5	14.0	15.0	15.5
5	16.5	12.0	---	---	3.0	2.5	5.5	5.0	8.5	15.0	16.0	16.5
6	16.0	11.5	8.5	4.0	3.0	2.5	5.5	4.5	9.0	14.5	16.0	15.0
7	15.5	11.0	8.5	---	3.5	2.5	4.0	5.5	9.5	14.0	16.5	15.0
8	14.0	---	8.0	4.0	3.5	3.0	5.0	---	9.0	15.0	15.5	16.0
9	15.0	10.0	9.0	4.5	3.0	3.0	3.5	5.5	10.0	13.5	16.0	15.0
10	15.5	9.5	8.0	4.5	3.5	3.5	3.5	6.0	10.0	15.0	15.5	16.5
11	15.0	9.5	7.0	4.0	3.5	2.0	4.0	5.0	9.5	15.5	16.0	15.0
12	14.5	9.5	6.5	4.5	3.5	2.5	4.5	6.0	9.5	14.0	15.5	15.5
13	---	10.5	---	4.0	3.5	2.0	4.0	6.0	9.0	14.0	16.0	15.0
14	14.0	10.0	5.5	3.5	---	2.5	4.5	5.5	9.0	14.0	14.5	15.5
15	14.5	10.0	---	4.5	2.5	3.0	4.5	---	---	13.5	15.5	16.0
16	15.0	9.5	---	4.5	2.5	3.0	3.5	6.0	9.5	14.0	15.5	15.5
17	15.0	9.0	5.5	5.0	3.0	3.5	4.0	7.0	9.0	14.0	15.5	16.0
18	15.0	9.0	6.5	4.0	3.0	3.5	4.0	7.0	---	14.5	15.5	15.0
19	14.5	9.0	6.5	4.0	3.0	2.5	4.5	6.5	11.0	14.0	16.0	16.0
20	14.5	8.5	6.5	4.5	3.0	3.0	4.5	6.0	11.0	15.5	---	15.5
21	13.5	8.5	6.5	4.5	2.5	3.5	4.5	7.0	12.0	15.0	15.5	15.5
22	13.0	8.5	6.0	4.5	2.5	3.5	4.5	5.5	11.5	16.0	16.0	15.5
23	13.0	9.0	5.5	4.0	3.5	3.5	4.0	6.0	12.0	16.0	16.5	---
24	13.0	8.0	5.5	3.5	3.0	3.5	---	7.0	11.5	---	16.0	16.0
25	11.5	---	6.5	3.5	3.0	3.0	5.0	6.5	11.5	15.0	16.0	15.0
26	13.0	8.5	6.5	3.5	3.5	3.5	4.0	7.5	11.5	15.5	15.0	15.0
27	12.5	8.0	5.5	4.0	3.5	---	3.5	8.0	12.5	15.5	15.5	15.0
28	12.5	8.0	5.5	4.5	2.5	3.5	4.0	7.5	13.5	15.5	15.0	15.5
29	12.5	8.0	6.5	4.5	2.5	3.5	4.5	6.0	13.5	15.5	16.0	15.5
30	13.0	---	5.5	3.5	---	4.0	5.0	8.0	14.0	14.0	15.5	16.0
31	13.0	---	5.0	3.0	---	4.0	---	8.0	---	14.5	---	---
MONTH	14.5	9.5	7.0	4.0	3.0	3.0	4.0	6.0	10.5	14.5	15.5	15.5

YEAR MAX 17.0 MIN 2.0 MEAN 9.0

06288200 BEAUVAIS CREEK NEAR ST. XAVIER, MT

(Hydrologic bench-mark station)

LOCATION.--Lat 45°28'40", long 108°00'33", on west line of sec.15, T.4 S., R.30 E., Big Horn County, Hydrologic Unit 10080015, 1 mi (2 km) downstream from Point Creek, 3 mi (5 km) upstream from Muddy Creek, and 14 mi (23 km) west of St. Xavier.

DRAINAGE AREA.--100 mi^2 (259 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,350 ft (1,020 m), from topographic map.

REMARKS.--Water-discharge records fair except those for winter period and August and September, which are poor. No regulation. Diversions for irrigation of about 200 acres (809,000 m^2) above station.

AVERAGE DISCHARGE.--9 years, 25.0 ft^3/s (0.708 m^3/s), 18,110 acre-ft/yr (22.3 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,600 ft^3/s (45.3 m^3/s) June 9, 1968, gage height, 8.0 ft (2.44 m), from flood mark, from rating curve extended above 250 ft^3/s (7.08 m^3/s) on basis of slope-area measurement of peak flow; minimum daily, 0.50 ft^3/s (0.014 m^3/s) Jan. 18, 1970.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 125 ft^3/s (3.54 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Jan. 17		backwater from ice		*5.34	1.628	June 15	1200	*193	5.47	5.32	1.621
Apr. 17	1015	143	4.05	4.92	1.500						

Minimum daily discharge, 4.8 ft^3/s (0.136 m^3/s) Sept. 9, 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	14	7.0	16	16	19	24	33	20	13	9.0	6.7
2	13	14	8.0	14	14	18	29	33	20	13	24	6.5
3	13	13	10	12	13	12	27	34	16	13	31	6.4
4	12	13	12	10	11	10	23	33	17	13	18	6.4
5	12	13	13	7.0	10	9.0	25	38	17	12	9.7	6.5
6	13	13	11	7.0	10	8.0	29	60	21	12	8.5	6.3
7	13	13	10	7.0	11	10	34	40	20	12	8.2	6.1
8	14	13	10	7.0	15	13	36	34	16	12	7.8	6.2
9	16	13	10	7.0	25	15	39	34	17	11	7.4	4.8
10	15	13	10	8.0	46	20	40	33	14	11	7.2	4.8
11	14	13	10	8.0	38	25	41	32	15	11	7.4	5.0
12	14	12	10	8.0	31	27	42	32	35	11	7.6	5.4
13	16	14	9.0	8.0	37	21	44	29	32	11	7.7	6.1
14	17	13	8.0	8.0	39	19	48	29	35	11	7.6	5.9
15	18	13	5.0	9.0	31	18	53	30	131	10	7.7	5.9
16	16	12	6.0	10	27	22	54	30	31	10	7.5	6.5
17	14	13	8.0	13	22	26	114	27	30	10	7.6	6.0
18	14	14	9.0	20	21	31	51	26	55	9.9	7.7	6.1
19	14	15	9.0	18	20	37	39	26	22	10	7.8	6.4
20	14	11	10	15	19	29	37	26	18	10	7.8	6.2
21	14	9.0	12	14	22	22	36	25	17	10	7.5	5.8
22	17	11	13	14	21	21	40	24	16	10	7.1	5.7
23	25	14	15	13	21	23	35	24	22	9.5	7.1	7.2
24	22	17	17	13	19	26	34	24	19	9.1	6.9	7.1
25	18	17	20	13	20	25	33	24	16	8.7	6.9	7.1
26	15	15	23	13	22	26	38	25	16	8.5	7.0	7.2
27	15	12	26	13	27	23	79	19	15	8.6	6.7	7.6
28	16	9.0	26	14	29	24	110	19	14	9.5	6.7	7.5
29	14	7.0	22	15	22	22	48	19	14	8.4	6.7	7.1
30	13	6.0	20	18	---	20	36	18	14	8.2	6.7	7.5
31	13	---	18	18	---	21	---	23	---	8.2	6.7	---
TOTAL	468	379.0	397.0	370.0	659	642.0	1318	903	751	324.6	283.2	190.0
MEAN	15.1	12.6	12.8	11.9	22.7	20.7	43.9	29.1	25.0	10.5	9.14	6.33
MAX	25	17	26	20	46	37	114	60	131	13	31	7.6
MIN	12	6.0	5.0	7.0	10	8.0	23	18	14	8.2	6.7	4.8
AC-FT	928	752	787	734	1310	1270	2610	1790	1490	644	562	377

CAL YR 1975 TOTAL 16927.5 MEAN 46.4 MAX 418 MIN 5.0 AC-FT 33580
WTR YR 1976 TOTAL 6684.8 MEAN 18.3 MAX 131 MIN 4.8 AC-FT 13260

06288200 BEAUVAIS CREEK NEAR ST. XAVIER, MT--Continued
(Hydrologic bench-mark station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967 to current year.

REMARKS.--Flow not regulated except for diversions for irrigation of about 200 acres (809,000 m^2) above station.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)
OCT										
29...	1115	15	1920	8.2	10.0	3.0	11.6	98	750	230
NOV										
24...	1230	18	1680	8.5	.0	.0	12.4	96	--	65
DEC										
30...	1115	20	1580	8.0	6.0	.0	12.0	93	3100	110
JAN										
26...	1000	13	1660	7.9	-3.0	.0	12.4	96	350	130
FEB										
25...	1030	20	1740	8.4	4.5	.0	12.2	95	3000	7
MAR										
23...	1015	22	1330	8.3	10.0	3.0	11.8	100	1100	3
APR										
20...	1015	38	1200	8.5	13.0	10.0	10.0	100	380	39
MAY										
18...	1030	26	1150	8.0	19.5	15.5	9.2	105	200	87
JUN										
28...	1100	14	1320	8.2	21.0	17.0	9.3	109	1200	400
JUL										
26...	1050	8.2	1430	8.0	22.0	21.0	7.4	95	600	340
AUG										
11...	1045	7.4	1410	8.0	24.0	19.0	8.2	101	880	310
SEP										
14...	1000	5.9	1480	8.0	18.0	14.0	8.6	95	530	430

DATE	FECAL STREPTOCOCCI KF AGAR (COL. PER 100 ML)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)
OCT										
29...	760	780	560	230	51	75	1.2	5.2	273	0
NOV										
24...	270	850	610	250	54	67	1.0	3.2	291	0
DEC										
30...	820	570	350	160	42	130	2.4	3.4	267	0
JAN										
26...	380	750	490	210	55	110	1.7	1.1	317	0
FEB										
25...	240	710	490	200	52	120	2.0	3.3	274	0
MAR										
23...	43	590	380	170	40	77	1.4	3.0	254	0
APR										
20...	340	520	310	140	41	71	1.4	3.0	256	0
MAY										
18...	370	550	370	150	42	45	.8	2.2	218	0
JUN										
28...	450	710	550	200	50	50	.8	2.9	188	0
JUL										
26...	170	750	610	220	49	33	.5	2.6	175	0
AUG										
11...	1200	730	580	210	50	35	.6	2.9	182	0
SEP										
14...	570	740	580	220	47	36	.6	3.9	195	0

06288200 BEAUVAIS CREEK NEAR ST. XAVIER, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
OCT										
29...	670	5.6	.4	13	1230	1180	1.67	49.8	.07	.03
NOV										
24...	720	6.9	.4	14	1290	1260	1.75	64.1	.28	.00
DEC										
30...	570	9.1	.4	10	1150	1060	1.56	63.0	.27	.18
JAN										
26...	700	6.8	.4	11	1330	1250	1.81	46.7	.33	.12
FEB										
25...	680	7.3	.4	11	1330	1210	1.81	71.8	.25	.14
MAR										
23...	520	4.9	.4	9.9	1040	950	1.41	61.8	.09	.05
APR										
20...	430	3.6	.3	9.6	925	825	1.26	94.9	.13	.16
MAY										
18...	450	2.6	.2	11	880	810	1.20	61.8	.00	.06
JUN										
28...	580	3.4	.4	13	1060	992	1.44	40.9	.06	.06
JUL										
26...	620	2.9	.3	11	1100	1030	1.50	24.4	.00	.03
AUG										
11...	600	2.7	.4	12	1070	1000	1.46	21.4	.02	.02
SEP										
14...	630	3.4	.4	12	1170	1050	1.59	18.6	.00	.04

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
NOV							
24...	1230	1	0	<10	15	30	420
APR							
20...	1015	4	200	<10	0	20	4100

DATE	TOTAL LEAD (PB) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	TOTAL SILVER (AG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	CYANIDE (CN) (MG/L)
NOV							
24...	100	120	.0	3	10	4	.00
APR							
20...	<100	270	.0	2	<10	10	.03

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	DIS-SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS-PENDED GROSS ALPHA AS U-NAT. (UG/L)	DIS-SOLVED GROSS BETA AS CS-137 (PC/L)	SUS-PENDED GROSS BETA AS CS-137 (PC/L)	DIS-SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS-PENDED GROSS BETA AS SR90 /Y90 (PC/L)	DIS-SOLVED RA-226 (RADON METHOD) (PC/L)	DIS-SOLVED URANIUM (DIRECT FLUORO-METRIC) (PC/L)	TOTAL FILT-RABLE RESIDUE (MG/L)	TOTAL NON-FILT-RABLE RESIDUE (MG/L)
NOV											
24...	1230	26	1.2	13	1.7	10	1.6	.04	4.7	1400	32

06288200 BEAUVAIS CREEK NEAR ST. XAVIER, MT--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TOTAL ALDRIN (UG/L)	ALDRIN IN BOTTOM MATERIAL (UG/KG)	TOTAL CHLORDANE (UG/L)	CHLORDANE IN BOTTOM MATERIAL (UG/KG)	TOTAL DDD (UG/L)	DDD IN BOTTOM MATERIAL (UG/KG)	TOTAL DDE (UG/L)	DDE IN BOTTOM MATERIAL (UG/KG)	TOTAL DDT (UG/L)	DDT IN BOTTOM MATERIAL (UG/KG)	TOTAL DIAZINON (UG/L)
NOV 24...	1230	.00	.0	.0	1	.00	.0	.00	.0	.00	.0	.00

DATE	TOTAL DIELDRIN (UG/L)	DIELDRIN IN BOTTOM MATERIAL (UG/KG)	TOTAL ENDRIN (UG/L)	ENDRIN IN BOTTOM MATERIAL (UG/KG)	TOTAL ETHION (UG/L)	TOTAL HEPTACHLOR (UG/L)	HEPTACHLOR IN BOTTOM MATERIAL (UG/KG)	TOTAL HEPTACHLOR EPOXIDE (UG/L)	HEPTACHLOR EPOXIDE IN BOTTOM MATERIAL (UG/KG)	TOTAL LINDANE (UG/L)	LINDANE IN BOTTOM MATERIAL (UG/KG)	TOTAL MALATHION (UG/L)
NOV 24...	.00	.0	.00	.0	.00	.00	.0	.00	.0	.00	.0	.00

DATE	TOTAL METHYL PARATHION (UG/L)	TOTAL METHYL TRITHION (UG/L)	TOTAL PARATHION (UG/L)	TOTAL PCB (UG/L)	PCB IN BOTTOM MATERIAL (UG/KG)	TOTAL TOXAPHENE (UG/L)	TOXAPHENE IN BOTTOM MATERIAL (UG/KG)	TOTAL TRITHION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)
NOV 24...	.00	.00	.00	.0	0	0	0	.00	.00	.00	.00

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
OCT 29...	1115	3.0	15	235	9.5
NOV 24...	1230	.0	18	100	4.9
DEC 30...	1115	.0	20	452	24
JAN 26...	1000	.0	13	302	9.8
FEB 25...	1030	.0	20	314	17
MAR 23...	1015	3.0	22	150	8.9
APR 20...	1015	10.0	38	315	32
MAY 18...	1030	15.5	26	155	11
JUN 28...	1100	17.0	14	355	13
JUL 26...	1050	21.0	8.2	45	1.0
AUG 11...	1045	19.0	7.4	36	.72
SEP 14...	1000	14.0	5.9	36	.57

06289000 LITTLE BIGHORN RIVER AT STATE LINE, NEAR WYOLA, MT

LOCATION.--Lat 45°00'25", long 107°37'05", in SW¼NW¼ sec.36, T.9 S., R.33 E., Bighorn County, Hydrologic Unit 10080016, on right bank 20 ft (6 m) downstream from county bridge, 0.5 mi (0.8 km) north of Wyoming-Montana State line, 1 mi (2 km) downstream from West Fork, and 13 mi (21 km) southwest of Wyola.

DRAINAGE AREA.--193 mi^2 (500 km^2).

PERIOD OF RECORD.--March 1939 to current year. Prior to October 1940, published as Little Horn River at State line, near Wyola.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,450 ft (1,360 m), from topographic map.

REMARKS.--Records good. Diversions for irrigation of 163 acres (660,000 m^2) above station.

AVERAGE DISCHARGE.--37 years, 155 ft^3/s (4.390 m^3/s), 112,300 acre-ft/yr (138 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,730 ft^3/s (77.3 m^3/s) June 3, 1944, gage height, 4.87 ft (1.484 m), from rating curve extended above 1,400 ft^3/s (39.6 m^3/s); maximum gage height recorded, 5.93 ft (1.807 m) June 9, 1944 (log jam); minimum discharge, 21 ft^3/s (0.59 m^3/s) Dec. 27, 1954, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 510 ft^3/s (14.4 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
June 3	2145	842	23.8	2.79	0.850	June 22	2300	*942	26.7	*2.85	0.869

Minimum daily discharge, 48 ft^3/s (1.36 m^3/s) Feb. 5, 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	129	113	94	68	74	75	73	82	628	429	204	117
2	126	113	113	66	74	50	73	87	659	394	222	117
3	124	113	106	61	75	50	71	94	696	409	200	115
4	124	110	104	74	58	58	73	108	677	375	176	115
5	124	108	100	91	48	58	73	119	668	356	170	115
6	121	110	96	78	48	73	79	110	622	347	167	115
7	124	108	96	57	74	89	82	106	622	333	161	129
8	126	104	94	77	91	87	80	117	610	320	158	117
9	124	98	94	85	87	80	82	141	569	307	155	115
10	124	102	94	87	82	78	85	167	552	294	155	113
11	124	104	94	80	78	77	84	222	535	281	153	113
12	121	98	93	78	78	72	89	193	535	276	150	117
13	124	104	93	75	78	77	96	180	486	268	150	117
14	121	104	71	74	77	75	96	255	454	250	147	115
15	119	102	91	77	78	74	94	320	459	242	144	110
16	119	104	85	75	78	74	102	259	502	234	144	108
17	119	104	61	72	78	74	91	259	513	226	139	108
18	119	104	87	74	77	74	89	338	481	226	139	108
19	115	98	100	71	77	75	87	439	518	218	139	110
20	115	69	96	72	75	76	84	486	587	218	139	106
21	117	75	93	72	74	76	85	518	671	211	136	104
22	124	84	91	74	75	76	84	518	703	204	136	102
23	113	106	91	74	75	76	85	497	741	197	131	102
24	110	106	89	74	75	74	82	507	622	190	136	102
25	113	102	89	65	75	77	87	558	569	190	131	102
26	124	100	87	62	75	71	93	541	524	190	131	113
27	121	100	87	82	77	74	89	552	491	186	129	106
28	113	91	85	75	77	74	85	640	460	186	126	102
29	115	66	85	75	77	73	84	690	449	183	121	100
30	115	57	85	75	---	73	80	634	434	183	121	100
31	115	---	84	74	---	73	---	616	---	180	119	---
TOTAL	3722	2957	2828	2294	2165	2263	2537	10353	17034	8103	4629	3313
MEAN	120	98.6	91.2	74.0	74.7	73.0	84.6	334	568	261	149	110
MAX	129	113	113	91	91	89	102	690	741	429	222	129
MIN	110	57	61	57	48	50	71	82	434	180	119	100
AC-FT	7380	5870	5610	4550	4290	4490	5030	20540	33790	16070	9180	6570

CAL YR 1975 TOTAL 93446 MEAN 256 MAX 1710 MIN 50 AC-FT 185400
WTR YR 1976 TOTAL 62190 MEAN 170 MAX 741 MIN 48 AC-FT 123400

06294000 LITTLE BIGHORN RIVER NEAR HARDIN, MT

LOCATION (revised).--Lat 45°44'10", long 107°33'24", in NW¼SW¼NW¼ sec.20, T.1 S., R.34 E., Big Horn County, Hydrologic Unit 10080016, on right bank 15 ft (4.6 m) downstream from bridge on Sarpy Road, 0.2 mi (0.3 km) upstream from terminal wasteway of Agency Canal, 0.6 mi (1.0 km) upstream from mouth, and 2.3 mi (3.7 km) east of Hardin.

DRAINAGE AREA.--1,294 mi^2 (3,351 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1953 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,890 ft (881 m) from topographic map. Prior to Oct 7, 1953, nonrecording gage at site 0.4 mi (0.6 km) downstream. Oct. 7, 1953, to May 6, 1963, water-stage recorder at site 0.3 mi (0.5 km) downstream. May 6, 1963, to Nov. 6, 1963, nonrecording gage at site 0.4 mi (0.6 km) downstream. All at different datums. Nov. 7, 1963, to Aug. 15, 1976, water-stage recorder at site 35 ft (11 m) downstream at present datum.

REMARKS.--Water-discharge records good except those for winter period and July to September, which are poor. Flow partly regulated by Willow Creek Reservoir (capacity 23,000 acre-ft, 28.4 hm^3). Diversions for irrigation of about 17,000 acres (68.8 km^2) above station. Figures of discharge given herein include flow of terminal wasteway of Agency Canal.

AVERAGE DISCHARGE.--23 years 313 ft^3/s (8.864 m^3/s), 226,800 acre-ft/yr (280 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,520 ft^3/s (128 m^3/s) Apr. 2, 1965; maximum gage height, 11.78 ft (3.591 m) Mar. 20, 1960, site and datum then in use (backwaker from ice); minimum discharge observed, 0.20 ft^3/s (0.006 m^3/s) Aug. 7, 1961, result of discharge measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft^3/s (28.3 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage Height (ft)	Gage Height (m)
Dec. 5	0040	(a)		*4.24	1.292	June 24	1000	*1,380	39.1	4.00	1.219

a Backwater from ice.

Minimum daily discharge, 61 ft^3/s (1.73 m^3/s) Nov. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	272	266	90	210	350	400	249	433	834	837	94	120
2	248	256	140	190	340	300	248	361	805	822	96	105
3	248	252	170	180	330	250	257	306	776	793	133	98
4	248	247	220	170	320	180	253	281	791	785	262	100
5	244	243	260	180	290	200	238	313	826	729	229	100
6	226	238	250	190	260	220	229	347	913	671	210	106
7	212	238	240	300	200	230	229	392	925	599	173	107
8	240	243	250	280	210	250	234	351	891	547	153	136
9	256	238	260	250	230	300	243	318	848	524	121	148
10	292	234	230	260	270	380	234	312	833	471	112	149
11	258	225	210	270	300	450	238	334	813	434	147	142
12	254	207	200	280	400	460	238	367	806	427	160	146
13	240	199	180	280	450	370	229	421	815	411	142	168
14	263	256	170	280	520	340	277	398	874	393	135	186
15	268	243	160	280	580	300	272	403	1120	335	132	204
16	275	256	160	290	600	340	282	504	1160	262	150	195
17	262	243	170	300	600	404	302	550	1020	229	142	185
18	266	247	180	320	580	541	422	479	1140	203	133	178
19	244	256	195	340	550	658	458	454	1150	232	129	172
20	253	171	200	340	530	573	335	535	1030	230	119	165
21	253	81	210	330	510	452	297	641	1010	200	113	172
22	277	71	220	320	500	340	287	717	1060	173	108	187
23	306	76	230	310	500	313	287	750	1190	126	104	207
24	334	86	240	310	480	307	266	772	1350	122	103	194
25	306	91	240	310	500	313	244	727	1270	119	97	194
26	286	86	250	310	520	292	244	731	1210	119	97	209
27	281	76	250	300	500	282	253	737	1140	117	102	212
28	291	71	250	320	500	272	357	730	1030	120	107	231
29	271	66	240	330	480	272	508	710	955	115	112	231
30	285	61	230	350	---	272	470	756	891	92	105	234
31	266	---	220	350	---	257	---	841	---	99	120	---
TOTAL	8225	5523	6515	8730	12400	10518	8680	15971	29476	11336	4140	4981
MEAN	265	184	210	282	428	339	289	515	983	366	134	166
MAX	334	266	260	350	600	658	508	841	1350	837	262	234
MIN	212	61	90	170	200	180	229	281	776	92	94	98
AC-FT	16310	10950	12920	17320	24600	20860	17220	31680	58470	22480	8210	9880

CAL YR 1975 TOTAL 247129 MEAN 677 MAX 3840 MIN 40 AC-FT 490200
WTR YR 1976 TOTAL 126495 MEAN 346 MAX 1350 MIN 61 AC-FT 250900

06294000 LITTLE BIGHORN RIVER NEAR HARDIN, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1970 to current year.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1969 to current year.
WATER TEMPERATURES: October 1969 to current year.
SUSPENDED SEDIMENT DISCHARGE: October 1969 to current year.
REMARKS.--Flow affected by ice during most of winter months. Flow affected by reservoirs and diversions for irrigation upstream from station.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,430 micromhos Apr. 14, 1975; minimum daily, 377 micromhos June 18, 1974.
WATER TEMPERATURES: Maximum daily, 30.0°C Aug. 9, 12, 1971; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily, 6,600 mg/L Mar. 20, 1975; minimum daily, 7 mg/L Oct. 29, 30, 1975, Sept. 4, 1976.
SEDIMENT LOADS: Maximum daily, 58,000 tons (52,600 tonnes) May 9, 1975; minimum daily, 2.3 tons (2.1 tonnes) Dec. 30, 1975.
EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,200 micromhos Mar. 11, Apr. 18; minimum daily, 434 micromhos June 7.
WATER TEMPERATURES: Maximum daily, 26.5°C Aug. 19; minimum daily, 0.0°C on many days during November to March.
SEDIMENT CONCENTRATIONS: Maximum daily, 3,700 mg/L Mar. 20; minimum daily, 7 mg/L Sept. 14.
SEDIMENT LOADS: Maximum daily, 5,920 tons (5,370 tonnes); minimum daily, 1.9 tons (1.7 tonnes).

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE (DEG C)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
OCT												
31...	1540	265	800	6.5	330	97	73	36	46	1.1	2.7	285
NOV												
13...	1545	194	806	.5	330	93	70	38	46	1.1	2.4	291
DEC												
19...	1230	195	997	.0	420	140	95	45	65	1.4	3.1	342
JAN												
12...	1440	280	981	.0	420	130	96	44	59	1.3	3.3	360
FEB												
11...	1420	300	1070	.0	440	160	97	48	68	1.4	3.0	347
MAR												
19...	1145	714	1060	1.0	380	150	76	47	89	2.0	3.3	285
APR												
15...	1100	270	1080	14.5	430	170	85	53	91	1.9	3.4	315
MAY												
10...	1200	311	1030	18.0	390	150	78	48	84	1.8	3.4	298
JUN												
10...	1025	845	--	20.5	210	--	52	20	18	.5	1.7	--
JUL												
20...	0950	230	600	20.0	260	70	54	30	33	.9	2.3	230
AUG												
12...	1030	160	720	22.0	270	89	54	34	41	1.1	2.9	226

DATE	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT												
31...	200	4.0	.2	6.7	509	.69	364	.01	.00	.01	0	10
NOV												
13...	200	3.5	.2	6.3	510	.69	267	.00	.03	.00	10	10
DEC												
19...	250	4.0	.3	8.5	641	.87	337	.22	.00	.00	30	10
JAN												
12...	250	3.1	.3	8.9	644	.88	487	.33	.00	.02	20	10
FEB												
11...	290	4.3	.3	8.2	691	.94	560	.30	.00	.01	30	10
MAR												
19...	320	4.5	.2	5.8	687	.93	1320	.25	.01	.00	30	30
APR												
15...	330	6.7	.2	5.5	730	.99	532	.02	.01	.00	20	30
MAY												
10...	310	4.8	.3	5.7	681	.93	572	.04	.01	.00	40	0
JUN												
10...	86	1.2	.2	6.7	--	--	--	--	.03	--	40	0
JUL												
20...	140	2.8	.4	6.6	383	.52	238	.07	.01	.00	10	10
AUG												
12...	170	3.2	.3	4.2	421	.57	182	.07	.01	.01	10	10

06294000 LITTLE BIGHORN RIVER NEAR HARDIN, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	711	718	---	850	939	1060	1070	1040	463	512	670	851
2	724	729	833	855	950	1090	1080	1080	460	509	678	840
3	727	742	778	849	972	1110	1080	1080	458	500	677	850
4	720	734	780	945	---	1140	1060	1080	448	518	647	862
5	729	738	830	906	1010	1180	1080	1080	466	488	629	851
6	730	710	822	1020	1050	1150	1070	1160	436	491	668	858
7	730	720	836	934	1080	1160	1070	1150	434	499	659	854
8	765	733	821	---	1120	1170	1060	1170	452	504	661	835
9	755	750	832	---	1100	1190	1040	1180	475	523	656	791
10	752	749	830	902	1100	1150	1030	1080	463	519	678	782
11	765	755	839	980	1000	1200	1020	1080	481	522	680	764
12	779	748	---	938	967	1090	1020	970	492	525	673	769
13	816	715	898	889	1030	1110	1000	886	497	542	691	780
14	768	758	906	867	1040	1100	1060	819	497	548	---	729
15	773	751	906	881	1090	1080	1070	819	608	549	679	737
16	768	744	919	881	1160	1030	1060	821	602	567	708	696
17	768	750	951	881	1100	1110	1180	732	670	575	708	724
18	772	740	938	870	1110	1080	1200	751	618	575	700	727
19	789	722	970	839	1110	1040	1190	772	647	569	711	724
20	780	748	957	902	1080	962	1160	742	608	590	---	732
21	776	803	936	871	1080	941	1080	670	581	581	---	739
22	772	834	944	910	1050	972	1110	622	529	599	---	737
23	766	852	---	1000	1050	1020	1090	592	504	608	---	724
24	758	742	917	950	1050	1060	1070	568	559	621	---	711
25	---	780	---	1000	1030	1060	1080	562	539	631	---	708
26	798	817	---	981	1060	1060	1080	569	508	639	---	689
27	795	778	874	1040	1050	1070	1040	552	512	660	---	698
28	781	814	862	1110	1040	1060	1020	544	516	657	---	696
29	779	---	857	754	1060	1060	954	549	511	663	813	689
30	799	872	885	630	---	1070	990	531	518	662	835	678
31	791	---	909	904	---	1060	---	501	---	660	882	---
MONTH	765	760	878	908	1050	1090	1070	831	518	568	---	761

YEAR MAX 1200 MIN 434 MEAN 826

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	8.5	---	0.0	0.0	0.0	8.0	9.5	16.0	21.5	22.5	18.5
2	15.0	7.0	0.0	0.0	0.0	0.0	7.0	10.5	17.0	21.0	20.0	20.0
3	15.0	8.5	0.0	0.0	0.0	0.0	11.5	11.0	16.5	20.5	21.0	20.0
4	13.5	7.0	0.0	0.0	0.0	0.0	13.0	13.0	17.0	22.5	21.0	19.0
5	15.0	7.0	0.0	0.0	0.0	0.0	14.0	12.5	18.0	22.0	21.0	21.5
6	15.0	7.0	0.0	0.0	0.0	0.0	12.5	12.5	18.5	22.5	20.0	20.0
7	12.5	6.0	0.0	0.0	0.0	0.0	13.0	11.5	18.0	23.0	21.0	16.5
8	9.5	5.0	0.0	---	0.0	0.0	13.5	13.5	18.5	22.0	22.0	19.0
9	6.5	3.0	0.0	---	0.0	0.0	14.0	15.5	19.0	23.5	21.5	15.0
10	8.5	0.0	0.0	0.0	0.0	0.0	12.0	16.5	19.5	23.5	21.0	15.0
11	10.5	0.5	0.0	0.0	0.0	0.0	14.5	17.0	19.5	23.5	19.5	18.5
12	11.0	1.0	---	0.0	0.0	0.0	13.0	12.5	16.5	24.0	21.0	18.5
13	9.0	0.0	0.0	0.0	0.0	0.0	13.0	13.0	16.0	21.5	21.0	17.0
14	7.0	1.0	0.0	0.0	0.0	0.0	16.0	16.0	13.5	21.5	---	19.0
15	6.5	4.0	0.0	0.0	0.0	0.0	12.0	13.5	11.0	20.5	23.0	18.0
16	10.0	3.0	0.0	0.0	0.0	0.0	12.0	14.0	14.0	21.0	25.0	21.5
17	12.0	3.0	0.0	0.0	0.0	0.5	10.5	14.5	13.0	22.0	25.0	19.0
18	12.0	2.5	0.0	0.0	0.0	3.0	12.5	15.5	13.5	24.5	25.0	18.0
19	11.0	2.0	0.0	0.0	0.0	1.5	12.0	16.5	14.0	23.5	26.5	15.0
20	10.0	0.0	0.0	0.0	0.0	2.0	12.0	17.5	17.0	22.0	---	17.5
21	9.0	0.0	0.0	0.0	0.0	4.0	13.0	17.0	18.0	22.0	---	15.0
22	6.5	0.0	0.0	0.0	0.0	3.5	11.0	17.0	19.0	22.5	---	15.0
23	5.0	0.0	---	0.0	0.0	5.0	11.0	15.5	15.5	22.5	---	17.0
24	4.5	0.0	0.0	0.0	0.0	7.0	13.0	14.0	15.5	23.5	---	17.0
25	---	0.0	---	0.0	0.0	6.0	12.5	16.0	15.0	23.5	---	17.0
26	6.0	0.0	---	0.0	0.0	8.0	11.0	14.5	13.5	23.0	---	17.5
27	5.0	0.0	0.0	0.0	0.0	7.0	7.0	15.0	14.5	23.0	---	14.0
28	5.0	0.0	0.0	0.0	0.0	9.5	7.5	17.0	15.5	24.0	---	13.5
29	6.0	---	0.0	0.0	0.0	7.0	9.5	16.5	16.5	21.0	22.5	12.0
30	5.5	0.0	0.0	0.0	---	10.5	10.0	15.5	18.5	21.0	20.0	15.0
31	8.0	---	0.0	0.0	---	9.5	---	16.0	---	22.0	19.5	---
MONTH	9.5	2.5	0.0	0.0	0.0	2.5	11.5	14.5	16.5	22.5	---	17.5

YEAR MAX 26.5 MIN 0.0 MEAN 10.0

06294000 LITTLE BIGHORN RIVER NEAR HARDIN, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	272	60	44	266	68	49	90	56	14
2	248	40	27	256	52	36	140	66	25
3	248	39	26	252	52	35	170	145	67
4	248	40	27	247	49	33	220	93	55
5	244	46	30	243	36	24	260	128	90
6	226	40	24	238	42	27	250	308	208
7	212	29	17	238	29	19	240	151	98
8	240	23	15	243	23	15	250	109	74
9	256	28	19	238	27	17	260	154	108
10	292	46	36	234	29	18	230	109	68
11	258	22	15	225	24	15	210	189	107
12	254	23	16	207	40	22	200	120	65
13	240	22	14	199	54	29	180	79	38
14	263	37	26	256	51	35	170	48	22
15	268	36	26	243	47	31	160	45	19
16	275	41	30	256	41	28	160	54	23
17	262	50	35	243	47	31	170	87	40
18	266	56	40	247	35	23	180	83	40
19	244	45	30	256	36	25	195	132	69
20	253	44	30	171	63	29	200	100	54
21	253	42	29	81	97	21	210	75	43
22	277	50	37	71	115	22	220	98	58
23	306	53	44	76	123	25	230	99	61
24	334	64	58	86	367	85	240	94	61
25	306	41	34	91	198	49	240	99	64
26	286	39	30	86	76	18	250	156	105
27	281	40	30	76	65	13	250	213	144
28	291	52	41	71	52	10	250	226	153
29	271	60	44	66	70	12	240	165	107
30	285	315	242	61	62	10	230	150	93
31	266	128	92	---	---	---	220	78	46
TOTAL	8225	---	1208	5523	---	806	6515	---	2219
		JANUARY			FEBRUARY			MARCH	
1	210	62	35	350	162	153	400	98	106
2	190	79	41	340	133	122	300	146	118
3	180	53	26	330	123	110	250	132	89
4	170	66	30	320	84	73	180	154	75
5	180	116	56	290	99	78	200	135	73
6	190	551	283	260	71	50	220	277	165
7	300	215	174	200	64	35	230	375	233
8	280	118	89	210	65	37	250	445	300
9	250	137	92	230	72	45	300	508	411
10	260	104	73	270	73	53	380	271	278
11	270	78	57	300	148	120	450	381	463
12	280	177	134	400	227	245	460	575	714
13	280	183	138	450	173	210	370	600	599
14	280	159	120	520	187	263	340	443	407
15	280	264	200	580	237	371	300	556	450
16	290	285	223	600	222	360	340	211	194
17	300	333	270	600	225	364	404	720	785
18	320	338	292	580	182	285	541	920	1340
19	340	640	588	550	163	242	658	1800	3200
20	340	672	617	530	163	233	573	3700	5720
21	330	380	339	510	166	229	452	1200	1460
22	320	222	192	500	168	227	340	470	431
23	310	283	237	500	191	258	313	352	297
24	310	173	145	480	198	257	307	254	211
25	310	79	66	500	265	358	313	207	175
26	310	107	90	520	466	654	292	172	136
27	300	187	151	500	516	697	282	160	122
28	320	109	94	500	360	486	272	169	124
29	330	64	57	480	105	136	272	123	90
30	350	72	68	---	---	---	272	124	91
31	350	128	121	---	---	---	257	98	68
TOTAL	8730	---	5098	12400	---	6751	10518	---	18925

06294000 LITTLE BIGHORN RIVER NEAR HARDIN, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	249	63	42	433	839	981	834	682	1540
2	248	58	39	361	826	805	805	576	1250
3	257	66	46	306	648	535	776	642	1350
4	253	60	41	281	484	367	791	738	1580
5	238	53	34	313	433	366	826	756	1690
6	229	83	51	347	374	350	913	860	2120
7	229	77	48	392	360	381	925	758	1890
8	234	77	49	351	256	243	891	679	1630
9	243	80	52	318	197	169	848	486	1110
10	234	93	59	312	175	147	833	396	891
11	238	64	41	334	230	207	813	378	830
12	238	85	55	367	214	212	806	340	740
13	229	66	41	421	264	300	815	338	744
14	277	132	99	398	262	282	874	369	871
15	272	130	95	403	287	312	1120	936	2830
16	282	132	101	504	344	468	1160	1890	5920
17	302	146	119	550	545	809	1020	1350	3720
18	422	244	278	479	479	619	1140	1560	4800
19	458	433	535	454	347	425	1150	1620	5030
20	335	982	888	535	443	640	1030	900	2500
21	297	935	750	641	549	950	1010	684	1870
22	287	326	253	717	820	1590	1060	720	2060
23	287	408	316	750	797	1610	1190	990	3180
24	266	181	130	772	660	1380	1350	1560	5690
25	244	146	96	727	592	1160	1270	847	2900
26	244	133	88	731	533	1050	1210	588	1920
27	253	108	74	737	540	1070	1140	599	1840
28	357	187	180	730	507	999	1030	336	934
29	508	572	785	710	523	1000	955	340	877
30	470	1010	1280	756	720	1470	891	317	763
31	---	---	---	841	1030	2340	---	---	---
TOTAL	8680	---	6665	15971	---	23237	29476	---	65070
		JULY			AUGUST			SEPTEMBER	
1	837	269	608	94	37	9.4	120	17	5.5
2	822	219	486	96	36	9.3	105	15	4.3
3	793	235	503	133	43	15	98	19	5.0
4	785	196	415	262	68	48	100	7	1.9
5	729	149	293	229	67	41	100	18	4.9
6	671	125	226	210	58	33	106	17	4.9
7	599	117	189	173	44	21	107	26	7.5
8	547	105	155	153	33	14	136	36	13
9	524	107	151	121	43	14	148	28	11
10	471	94	120	112	36	11	149	20	8.0
11	434	95	111	147	36	14	142	17	6.5
12	427	83	96	160	44	19	146	19	7.5
13	411	86	95	142	56	21	168	22	10
14	393	85	90	135	54	20	186	27	14
15	335	78	71	132	54	19	204	20	11
16	262	78	55	150	55	22	195	25	13
17	229	74	46	142	58	22	185	21	10
18	203	77	42	133	44	16	178	21	10
19	232	65	41	129	38	13	172	25	12
20	230	75	47	119	47	15	165	19	8.5
21	200	75	40	113	48	15	172	27	13
22	173	69	32	108	45	13	187	34	17
23	126	64	22	104	44	12	207	55	31
24	122	51	17	103	45	13	194	48	25
25	119	49	16	97	44	12	194	50	26
26	119	50	16	97	41	11	209	65	37
27	117	42	13	102	37	10	212	67	38
28	120	50	16	107	36	10	231	67	42
29	115	42	13	112	35	11	231	78	49
30	92	34	8.4	105	34	9.6	234	71	45
31	99	41	11	120	22	7.1	---	---	---
TOTAL	11336	---	4044.4	4140	---	520.4	4981	---	491.5
YEAR	126495.0		135035.3						

06294690 TULLOCK CREEK NEAR BIGHORN, MT

LOCATION.--Lat 46°05'08", long 107°24'20", in NE¼NE¼NE¼ sec.19, T.4 N., R.35 E., Treasure County, Hydrologic Unit 10080015, on right bank at old diversion dam, 0.3 mi (0.5 km) upstream from Thunder Creek, 5.6 mi (9.0 km) south of Bighorn, and 8 mi (13 km) upstream from mouth.

DRAINAGE AREA.--446 mi^2 (1,155 km^2).

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,770 ft (844 m), from topographic map.

REMARKS.--Records good except those for periods of flow less than 1.0 ft^3/s (0.03 m^3/s) which are fair, and winter period, which are poor. Diversions for about 215 acres (87 km^2) above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,960 ft^3/s (55.5 m^3/s) Mar. 2, gage height, 7.4 ft (2.26 m), from floodmark; no flow many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft^3/s (2.83 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
June 7	0400	144	4.08	3.56	1.085	June 11	1830	*205	5.81	*3.92	1.195

No flow on many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	.30	1.2	2.2	3.5	15	13	7.1	1.5	1.1		
2	.04	.27	1.4	2.2	4.0	17	12	6.2	1.1	1.7		
3	.04	.27	1.8	2.2	4.0	19	11	6.0	.90	3.9		
4	.03	.33	2.0	2.2	4.0	14	11	6.7	1.4	1.5		
5	.02	.36	2.0	2.2	3.5	10	11	7.6	.60	1.1		
6	0	.28	2.0	2.2	3.5	9.5	10	9.4	11	.90		
7	.01	.33	2.0	2.3	3.5	9.0	9.7	9.1	77	.85		
8	.23	.18	2.2	2.4	3.5	10	9.4	8.8	30	.54		
9	.31	.23	2.2	2.6	4.0	11	6.9	8.0	14	.33		
10	.12	.28	2.2	2.8	4.5	11	6.9	9.4	5.1	.48		
11	.07	.28	2.2	3.0	5.0	11	6.7	11	28	.33		
12	.03	.27	2.0	3.2	5.0	10	6.7	9.1	50	.23		
13	.02	.25	2.0	3.2	5.0	10	6.0	8.3	6.4	.51		
14	.08	.27	2.0	3.2	5.5	13	6.0	7.8	11	.20		
15	.09	.30	2.0	3.0	6.0	18	6.4	9.1	17	.22		
16	.07	.45	2.0	2.9	6.5	18	6.9	8.5	6.2	.12		
17	.06	1.4	2.0	2.8	7.0	17	9.4	7.4	2.9	.10		
18	.04	1.4	2.0	2.9	7.0	16	11	6.2	2.8	.09		
19	.03	1.2	2.0	2.9	7.0	16	11	5.4	2.9	.10		
20	.05	1.1	1.8	2.9	7.5	25	11	4.3	2.1	.03		
21	.23	1.0	1.6	2.9	8.0	40	11	3.7	4.9	.02		
22	.70	1.0	1.4	3.0	8.5	35	11	4.3	5.4	0		
23	3.0	1.0	1.4	3.2	9.5	30	11	3.7	6.0	0		
24	1.5	1.0	1.4	3.3	10	25	11	3.0	4.9	0		
25	.85	1.0	1.4	3.3	11	23	10	2.6	5.3	0		
26	.57	1.0	1.8	3.2	12	21	9.7	1.8	4.3	.19		
27	.51	1.0	2.0	3.1	13	20	9.1	1.3	4.5	.01		
28	.36	1.0	2.2	3.0	13	16	9.1	1.0	3.5	0		
29	.36	1.0	2.4	3.0	14	15	9.1	1.8	2.1	0		
30	.35	1.0	2.4	3.0	---	14	8.5	1.5	1.5	0		
31	.30	---	2.4	3.0	---	14	---	1.7	---	0		---
TOTAL	10.11	19.75	59.4	87.3	198.5	532.5	281.5	181.8	314.30	14.55	0	0
MEAN	.33	.66	1.92	2.82	6.84	17.2	9.38	5.86	10.5	.47	0	0
MAX	3.0	1.4	2.4	3.3	14	40	13	11	77	3.9	0	0
MIN	0	.18	1.2	2.2	3.5	9.0	6.0	1.0	.60	0	0	0
AC-FT	20	39	118	173	394	1060	558	361	623	29	0	0

CAL YR 1975 TOTAL 10523.46 MEAN 28.8 MAX 1110 MIN 0 AC-FT 20870
WTR YR 1976 TOTAL 1699.71 MEAN 4.64 MAX 77 MIN 0 AC-FT 3370

06294700 BIGHORN RIVER AT BIGHORN, MT

LOCATION.--Lat 46°08'50", long 107°28'00", in NE¼NE¼ sec.33, T.5 N., R.34 E., Treasure County, Hydrologic Unit 10080015, on right bank just downstream from bridge on old U.S. Highway 10, 0.3 mi (0.5 km) downstream from bridge on Interstate Highway 94, 0.7 mi (1.1 km) upstream from mouth, 1.3 mi (2.1 km) southwest of Bighorn, and 4.4 mi (7.1 km) east of Custer.

DRAINAGE AREA.--22,885 mi² (59,272 km²). Area at site used prior to Oct. 7, 1955, 22,410 mi² (58,042 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1945 to current year. Prior to Oct. 7, 1955, published as "near Custer."

GAGE.--Water-stage recorder. Altitude of gage is 2,690 ft (820 m), by barometer. May 11 to Dec. 6, 1945, non-recording gage, and Dec. 7, 1945, to Oct. 6, 1955, water-stage recorder, at site 4 mi (6 km) upstream at different datum.

REMARKS.--Water-discharge records good except those for period of backwater from Yellowstone River, which are fair. Stage-discharge relation affected by backwater from Yellowstone River Apr. 9 to Aug. 16. Major regulation by 14 reservoirs in Wyoming and 1 in Montana with combined usable storage of about 1,400,000 acre-ft (1.73 km³), and Bighorn Lake (see p.337). Diversions for irrigation of about 465,000 acres (1,880 km²) above station.

AVERAGE DISCHARGE.--31 years, 3,966 ft³/s (112.3 m³/s), 2,874,000 acre-ft/yr (3.54 km³/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,200 ft³/s (742 m³/s) June 24, 1947, gage height, 8.79 ft (2.679 m), site and datum then in use, from rating curve extended above 12,500 ft³/s (354 m³/s); maximum gage height recorded, 14.21 ft (4.331 m) Apr. 2, 1965 (ice jam); minimum discharge, about 275 ft³/s (7.79 m³/s) Nov. 15, 1959, result of freezeup; minimum daily, 400 ft³/s (11.3 m³/s) Apr. 4, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,840 ft³/s (222 m³/s) June 23, gage height, 6.07 ft (1.850 m); maximum gage height, 6.28 ft (1.914 m) June 11 (backwater from Yellowstone River); minimum daily discharge, 1,350 ft³/s (38.2 m³/s) Nov. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3280	1350	4450	4900	4410	4790	4970	5690	5800	6030	2520	2290
2	3240	3860	4620	4800	4390	4400	5040	5730	5690	5660	2550	2280
3	3240	4320	4860	4800	4390	4400	5300	5570	5850	4820	2700	2260
4	3160	4370	5480	4800	4000	4400	5060	5480	6030	3740	2550	2260
5	3140	4200	5620	4450	3800	4500	4640	5750	5730	3700	2520	2280
6	3130	2630	4860	4110	3700	4500	1840	5800	6060	3700	2540	2290
7	3130	2650	4260	3900	3800	4930	1560	5640	6290	4320	2480	2460
8	3240	4490	4210	3500	3900	5040	3390	5550	6220	4510	2440	2550
9	3300	5080	4370	3700	4300	5120	4660	5530	6010	4240	2480	2590
10	3280	5060	4320	3950	4790	5210	5480	5440	6030	4260	2500	2610
11	3280	4880	3600	4340	4880	5280	5460	5550	6290	4300	2420	2630
12	3260	4750	3260	4470	4950	5390	5480	5690	6490	4320	2420	2670
13	3300	4770	3950	4450	5080	5170	5480	5820	6170	4240	2440	2700
14	3380	4900	4180	4390	5120	5060	5710	5480	6440	4240	2570	2760
15	3480	4880	4030	4340	5060	5080	5570	5750	7000	3950	2610	2770
16	3440	4300	4540	4280	4800	5040	5590	5960	6680	3600	2590	2860
17	3340	4450	4450	4620	4730	5100	5640	5800	6940	2910	2570	2870
18	3280	4750	4450	4950	4770	5260	5690	5530	7100	2930	2570	2850
19	3200	4970	4450	5060	4710	5480	5690	5010	7200	3050	2460	2850
20	3180	4860	4640	4860	4660	5690	5570	5370	6970	3200	2280	2570
21	3300	4690	4770	4660	4600	5460	5570	5350	6970	3280	2240	2290
22	3440	4620	4820	4560	4580	5190	5640	5300	7350	3130	2260	2430
23	3520	4660	4430	4510	4600	5080	5660	5350	7370	3110	2200	2740
24	3560	4840	4730	4490	4640	5040	5570	5350	7220	2670	2170	2640
25	3480	5010	4880	4430	4660	5060	5570	5480	7170	2280	2260	2300
26	3360	4950	4950	4400	4690	5100	5640	5550	6880	2290	2370	2890
27	3320	4900	5010	4240	4790	5080	5660	5350	6530	2330	2400	2860
28	3340	4840	4990	4140	4860	5080	5620	5690	6320	2200	2370	2800
29	3320	4600	4900	4280	4840	5060	5800	6170	6440	2290	2350	2780
30	3320	4430	4880	4370	---	5040	5800	6200	6200	2440	2330	2740
31	3280	---	4930	4430	---	4990	---	6030	---	2500	2310	---
TOTAL	102520	133060	141890	137180	132560	156020	154350	173960	195420	110320	75470	77870
MEAN	3307	4435	4577	4425	4571	5033	5145	5612	6514	3559	2435	2596
MAX	3560	5080	5620	5060	5120	5690	5800	6200	7370	6030	2700	2890
MIN	3130	1350	3260	3500	3700	4400	1560	5010	5690	2260	2170	2260
AC-FT	203300	263900	281400	272100	262900	309500	306200	345000	387600	218800	149700	154500

CAL YR 1975 TOTAL 1976240 MEAN 5414 MAX 11800 MIN 1350 AC-FT 3920000
WTR YR 1976 TOTAL 1590620 MEAN 4346 MAX 7370 MIN 1350 AC-FT 3155000

06294700 BIGHORN RIVER AT BIGHORN, MT--Continued
(National Stream Quality Accounting Network)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1951 to current year.
WATER TEMPERATURES: April 1949 to September 1951, August 1952 to current year.

INSTRUMENTATION.--Temperature recorder May to September 1974.

REMARKS.--Prior to October 1948, published as "near Custer." Flow regulated by reservoirs and diversions for irrigation upstream from station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,940 micromhos July 10, 1961; minimum daily, 384 micromhos June 20, 1951.
WATER TEMPERATURES: Maximum, 30.0°C July 17, 18, 1953; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,010 micromhos May 8; minimum daily, 619 micromhos Sept. 27.
WATER TEMPERATURES: Maximum daily, 21.5°C July 7, 26, 27; minimum daily, 0.0°C on several days during January to March.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	FECAL COLIFORM (COL. PER 100 ML)	FECAL STREPTOCOCCI KF AGAR (COL. PER 100 ML)
OCT											
20...	1145	3180	680	8.5	11.0	12.5	3	10.5	108	45	32
NOV											
17...	1120	4140	820	8.1	4.0	6.5	5	10.6	95	22	27
DEC											
15...	1230	4050	900	8.4	-.5	1.0	6	13.0	101	8	41
JAN											
28...	1315	4140	800	8.3	10.5	2.5	7	13.0	106	7	13
FEB											
24...	1430	4680	895	8.4	15.0	3.0	10	12.6	101	<1	300
MAR											
15...	1030	5010	905	8.3	3.0	2.5	3	12.4	101	11	73
APR											
26...	1200	5620	900	8.3	6.0	7.0	15	11.3	103	8	17
MAY											
20...	1210	5370	870	8.5	24.5	14.0	3	10.2	109	61	51
JUN											
14...	1140	6320	830	8.0	10.5	11.5	60	9.4	95	410	230
JUL											
19...	1130	3050	780	8.5	23.5	21.0	10	8.5	106	12	78
AUG											
16...	1220	2550	720	8.3	25.0	20.0	20	8.6	105	30	470
SEP											
20...	1015	2630	640	8.2	13.5	15.0	15	8.7	95	30	40

DATE	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT											
20...	7.5	.3	7.4	545	.74	4680	.12	.80	.92	.04	5.1
NOV											
17...	9.1	.4	8.3	541	.74	6050	.28	.37	.65	.00	--
DEC											
15...	9.9	.4	8.9	603	.82	6590	.34	.56	.90	.01	--
JAN											
28...	9.1	.4	8.2	564	.77	6300	.36	.46	.82	.03	4.0
FEB											
24...	10	.4	8.5	601	.82	7590	.35	.24	.59	.03	--
MAR											
15...	10	.4	9.3	607	.83	8210	.37	.46	.83	.05	--
APR											
26...	12	.4	8.8	641	.87	9730	.27	.30	.57	.06	5.3
MAY											
20...	12	.4	8.6	607	.83	8800	.15	.43	.58	.07	--
JUN											
14...	12	.4	8.8	606	.82	10300	.28	.88	1.2	.15	--
JUL											
19...	17	.3	5.8	465	.63	3830	.09	.15	.24	.03	4.2
AUG											
16...	7.6	.3	8.9	460	.63	3170	.27	.24	.51	.06	--
SEP											
20...	7.4	.3	8.8	435	.59	3090	.24	.62	.86	.03	--

06294700 BIGHORN RIVER AT BIGHORN, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DIS-SOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)
OCT											
20...	270	110	69	24	68	1.8	3.4	186	5	1.0	250
NOV											
17...	270	110	70	23	70	1.9	3.4	196	0	2.5	250
DEC											
15...	300	130	78	26	78	2.0	3.4	205	2	1.3	270
JAN											
28...	270	110	69	24	73	1.9	3.5	200	0	1.6	250
FEB											
24...	310	130	77	28	73	1.8	3.3	201	5	1.3	280
MAR											
15...	310	130	76	28	78	1.9	4.3	215	0	1.7	270
APR											
26...	320	130	80	28	84	2.1	4.0	224	0	1.8	290
MAY											
20...	320	140	80	29	74	1.8	3.9	214	0	1.1	280
JUN											
14...	290	130	74	26	52	1.3	3.5	203	0	3.2	250
JUL											
19...	240	96	63	21	61	1.7	3.2	172	4	.9	210
AUG											
16...	240	110	61	22	59	1.6	3.0	168	0	1.3	210
SEP											
20...	220	89	55	20	54	1.6	2.8	159	0	1.6	190

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DIS-SOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DIS-SOLVED CHROMIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
OCT												
20...	1145	1	0	0	1	50	0	80	0	30	1	540
JAN												
28...	1315	0	0	<10	1	0	0	<50	1	20	2	260
APR												
26...	1200	2	1	<10	1	10	0	<50	0	10	2	470
JUL												
19...	1130	--	2	<10	0	0	0	<50	0	40	1	960

DATE	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	DIS-SOLVED SELENIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT											
20...	0	100	3	40	10	.1	.0	2	2	50	10
JAN											
28...	10	<100	2	20	10	.1	.1	2	2	30	10
APR											
26...	180	<100	2	50	20	.0	.0	2	2	50	10
JUL											
19...	30	<100	2	50	10	.1	.0	2	2	30	10

06294700 BIGHORN RIVER AT BIGHORN, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	791	800	801	800	824	870	899	963	851	732	674	670
2	787	883	768	831	830	866	891	966	841	724	679	667
3	791	808	765	829	835	909	893	948	839	720	691	660
4	800	811	782	838	830	873	893	940	830	722	708	664
5	805	800	806	841	838	907	893	945	837	708	701	---
6	806	824	785	790	818	899	922	962	836	708	705	655
7	805	851	802	793	838	902	979	976	830	708	682	658
8	806	842	800	859	835	909	989	1010	809	700	683	658
9	805	822	822	841	839	906	900	982	822	711	681	650
10	817	822	832	831	857	907	881	960	823	711	670	649
11	817	828	810	808	854	907	880	959	821	708	671	649
12	822	831	821	808	854	931	876	945	820	708	681	647
13	819	819	860	785	863	898	880	941	841	696	681	652
14	817	791	850	781	879	898	865	931	832	689	681	646
15	817	791	859	790	851	880	898	935	828	689	671	656
16	819	800	857	783	852	891	900	925	858	687	671	647
17	800	806	794	788	851	889	916	928	851	708	672	639
18	798	817	847	799	843	893	964	917	842	699	662	631
19	806	828	828	830	842	898	972	916	830	699	665	630
20	806	825	789	810	827	902	944	918	821	695	658	632
21	798	819	791	804	840	876	911	912	800	695	679	639
22	800	819	811	803	849	865	908	899	792	693	665	639
23	814	820	830	819	832	862	911	891	768	696	671	635
24	825	817	820	810	831	864	922	886	799	687	669	631
25	829	819	811	819	842	868	911	889	778	693	671	621
26	839	809	804	819	842	868	909	885	770	700	669	621
27	820	809	817	819	847	868	901	885	758	685	670	619
28	790	816	810	819	859	868	921	885	755	691	668	622
29	800	824	800	808	854	870	980	886	765	700	---	623
30	810	838	811	819	---	872	949	881	758	691	652	622
31	795	---	787	827	---	873	---	872	---	687	662	---
MONTH	808	820	812	813	843	887	915	927	814	701	675	642

YEAR MAX 1010 MIN 619 MEAN 805

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.0	9.5	2.0	0.5	3.0	0.5	5.5	8.0	12.5	18.5	21.0	18.0
2	13.5	8.5	5.0	0.0	3.0	0.0	4.5	8.0	13.0	18.5	19.0	18.5
3	14.0	11.0	6.5	0.0	2.5	0.0	3.5	8.0	12.0	17.0	19.0	17.5
4	15.0	12.5	6.5	0.0	0.0	0.0	5.0	9.0	13.0	19.5	19.5	18.0
5	13.5	10.0	5.5	1.0	0.0	0.0	6.0	7.5	13.5	21.0	20.0	18.5
6	14.0	9.0	5.0	0.0	0.0	0.5	7.0	8.0	14.5	21.0	19.5	17.5
7	13.5	9.5	4.5	0.0	0.5	2.0	9.5	7.0	14.0	21.5	21.0	16.5
8	11.5	7.5	5.0	0.0	1.0	2.5	10.0	9.0	14.5	20.0	21.0	14.5
9	10.0	6.5	6.0	0.0	2.5	3.0	8.5	10.0	14.5	20.0	20.5	14.0
10	11.0	5.5	6.0	2.0	2.5	3.0	7.5	10.0	15.0	20.5	20.0	14.5
11	13.0	6.0	4.0	2.5	2.0	4.0	7.0	10.5	15.5	21.0	19.0	15.5
12	12.0	5.0	3.0	2.0	3.0	0.0	8.0	8.5	13.5	21.0	19.5	16.5
13	11.5	5.5	2.0	1.0	3.0	1.5	8.0	9.0	13.0	18.5	20.0	16.5
14	10.5	6.5	0.5	0.5	3.0	1.5	7.5	11.0	11.5	18.5	20.0	16.5
15	10.0	7.5	1.0	2.0	2.5	2.0	7.5	10.0	10.0	18.0	20.5	16.0
16	11.0	8.5	1.0	3.0	1.5	2.5	7.5	9.5	13.5	18.5	19.0	16.5
17	11.0	7.5	0.5	4.5	2.0	3.5	5.5	9.5	12.5	20.0	18.0	17.5
18	11.5	6.5	1.0	3.5	2.5	5.0	6.5	11.0	13.0	21.0	19.5	18.0
19	12.5	6.0	2.5	2.5	2.0	5.5	6.0	11.0	13.5	21.0	19.5	15.5
20	11.5	5.0	3.5	1.5	1.0	3.0	6.0	12.0	15.5	20.0	20.0	14.0
21	11.0	3.0	3.0	2.0	2.5	4.0	6.5	11.5	17.0	19.5	20.0	15.0
22	10.0	3.0	2.5	2.0	2.5	3.0	7.0	11.5	17.0	20.0	20.0	16.0
23	9.0	5.0	2.5	4.5	2.5	5.0	7.0	12.0	14.5	20.0	21.0	15.5
24	8.5	5.0	2.5	2.5	2.5	3.5	6.5	10.0	14.5	21.0	20.0	16.0
25	8.5	4.5	3.5	1.0	3.0	4.5	7.5	11.5	14.5	21.0	19.0	16.0
26	8.5	3.5	4.5	0.5	3.5	5.0	7.0	10.5	13.5	21.5	19.0	16.0
27	8.5	3.0	5.0	1.0	4.0	4.5	5.0	11.0	15.0	21.5	16.5	13.5
28	7.5	2.5	4.0	2.0	2.5	4.5	5.0	12.0	16.0	19.5	15.5	12.5
29	7.5	2.0	3.5	3.0	1.0	4.0	5.5	12.0	16.5	19.5	19.0	13.5
30	8.5	1.0	4.0	3.0	---	3.5	6.0	11.0	17.0	19.5	18.5	15.0
31	10.0	---	4.0	3.0	---	4.5	---	11.0	---	20.0	17.5	---
MONTH	11.0	6.0	3.5	1.5	2.0	3.0	6.5	10.0	14.0	20.0	19.5	16.0

YEAR MAX 21.5 MIN 0.0 MEAN 9.5

06294700 BIGHORN RIVER AT BIGHORN, MT--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .062 MM
OCT						
20...	1145	12.5	3180	31	266	68
NOV						
17...	1120	6.5	4140	21	235	70
DEC						
15...	1230	1.0	4050	14	153	84
JAN						
28...	1315	2.5	4140	30	335	59
FEB						
24...	1430	3.0	4680	44	556	70
MAR						
15...	1030	2.5	5010	71	960	57
APR						
26...	1200	7.0	5620	49	744	69
MAY						
20...	1210	14.0	5370	163	2360	49
JUN						
14...	1140	11.5	6320	228	3890	74
JUL						
19...	1130	21.0	3050	29	239	80
AUG						
16...	1220	20.0	2550	71	489	87
SEP						
20...	1015	15.0	2630	46	327	84

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON

Date	Length of exposure (days)	Biomass (g/m^2) Dry weight	Ash weight	Chlorophyll a (mg/m^2)	Chlorophyll b (mg/m^2)	Biomass pigment ratio	Sampling method
Oct 20	27	9.20	8.30	2.60	.300	330	Polyethylene strip
Jan 28	44	.500	.400	1.10	.200	67	
Jul 19	35	46.7	32.2	7.59	2.03	1900	

PHYTOPLANKTON

OCT. 20, 1975
1145 HOURS
2,300 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT
	CHRYSOPHYTA			
	.BACILLARIOPHYCEAE	DIATOMS		
	..CENTRALES	CENTRIC		
	...CODSCINODISCACEAE			
	....CYCLOTELLA		47	2
L	....MELOSIRA			0
	..PENNALES	PENNATE		
	...ACHNANTHACEAE			
	....ACHNANTHES		140	6
	....COCCONEIS		140	6
	....RHOICOSPHENIA		47	2
	...CYMBELLACEAE			
L	....AMPHORA			0
	....CYMBELLA		190	8
	...DIATOMACEAE			
L	....DIATOMA			0
	...GOMPHONEMATACEAE			
D	....GOMPHONEMA		370	16
	...NAVICULACEAE	NAVICULOID		
L	....CALONEIS			0
	....GYROSIGMA		47	2
D	....NAVICULA		1,200	50
	...NITZSCHIACEAE			
	....NITZSCHIA		190	8
		TOTALS	2,300	100

2.332=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
ORDER 0.141
FAMILY 2.007
GENERA 2.332

06294700 BIGHORN RIVER AT BIGHORN, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
NOV. 17, 1975
1120 HOURS
1,400 CELLS/ML

	ORGANISM NAME	COMMON NAME		CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE				
	.CHLOROPHYCEAE					
	..CHLOROCOCCALES					
	...SCENEDESMACEAE					
	....SCENEDESMUS			140	10	
			TOTALS	140	10	0.000=DIVERSITY
	CHRYSOPHYTA					
	.BACILLARIOPHYCEAE	DIATOMS				
	..CENTRALES	CENTRIC				
	...COSCINODISCACEAE					
	....CYCLOTELLA			51	4	
	....MELOSIRA			51	4	
	..PENNALES	PENNATE				
	...ACHNANTHACEAE					
	....ACHNANTHES			69	5	
	....COCCONEIS			51	4	
	....RHOICOSPHENIA			34	2	
	...CYMBELLACEAE					
	....CYMBELLA			190	13	
	...DIATOMACEAE					
	....DIATOMA			69	5	
	...FRAGILARIACEAE					
	....SYNEDRA			17	1	
	...GOMPHONEMATACEAE					
	....GOMPHONEMA			100	7	
	...NAVICULACEAE	NAVICULOID				
O	....NAVICULA			530	37	
	....PINNULARIA			17	1	
	...NITZSCHIACEAE					
	....NITZSCHIA			100	7	
			TOTALS	1,300	90	2.830=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS				
	.EUGLENOPHYCEAE					
	..EUGLENALES					
	...EUGLENACEAE					
	....TRACHELOMONAS			17	1	
			TOTALS	17	1	0.000=DIVERSITY

PHYL/DIV 0.545
CLASS 0.545
ORDER 0.904
FAMILY 2.760
GENERA 3.072

DEC. 15, 1975
1230 HOURS
180 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
L	....CYCLOTELLA			0	
L	....MELOSIRA			0	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
L	....ACHNANTHES			0	
	....COCCONEIS		15	8	
	...DIATOMACEAE				
	....DIATOMA		15	8	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		150	83	
		TOTALS	180	99	0.817=DIVERSITY

FAMILY 0.817
GENERA 0.817

06294700 BIGHORN RIVER AT BIGHORN, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
JAN. 28, 1976
1315 HOURS
1,200 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CLADOPHORALES				
	...CLADOPHORACEAE				
L	....CLADOPHORA			0	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		47	4	
	....COCCONEIS		23	2	
	....RHOICOSPHENIA		23	2	
	...CYMBELLACEAE				
	....CYMBELLA		23	2	
	...DIATOMACEAE				
D	....DIATOMA		190	16	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		210	18	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		520	43	
	...NITZSCHIACEAE				
	....NITZSCHIA		160	14	
		TOTALS	1,200	101	2.294=DIVERSITY

FAMILY 2.177
GENERA 2.294

FEB. 24, 1976
1430 HOURS
1,500 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		120	8	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		20	1	
	....COCCONEIS		41	3	
	....RHOICOSPHENIA		180	12	
	...DIATOMACEAE				
	....DIATOMA		200	14	
	...FRAGILARIACEAE				
	....SYNEDRA		200	14	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		220	15	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		450	31	
	...NITZSCHIACEAE				
L	....NITZSCHIA			0	
	...SURIRELLACEAE				
	....SURIRELLA		20	1	
		TOTALS	1,500	99	2.717=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
L	....OSCILLATORIA			0	

ORDER 0.414
FAMILY 2.543
GENERA 2.717

06294700 BIGHORN RIVER AT BIGHORN, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAR. 15, 1976
1030 HOURS
1,100 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		33	3	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		33	3	
	....COCCONEIS		33	3	
	....RHOICOSPHENIA		130	12	
	...CYMBELLACEAE				
	....CYMBELLA		33	3	
	....EPITHEMIA		33	3	
	...DIATOMACEAE				
	....DIATOMA		99	9	
	...FRAGILARIACEAE				
L	....ASTERIONELLA			0	
	....SYNEDRA		33	3	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		99	9	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		400	37	
	...NITZSCHIACEAE				
	....NITZSCHIA		130	12	
		TOTALS	1,100	97	2.858=DIVERSITY

ORDER 0.201
FAMILY 2.561
GENERA 2.858

APR. 26, 1976
1200 HOURS
1,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
L	....ANKISTRODESMUS			0	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
O	....CYCLOTELLA		180	18	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		41	4	
	....COCCONEIS		20	2	
	....RHOICOSPHENIA		20	2	
	...CYMBELLACEAE				
	....CYMBELLA		41	4	
	...DIATOMACEAE				
	....DIATOMA		82	8	
	...FRAGILARIACEAE				
	....ASTERIONELLA		20	2	
	....SYNEDRA		20	2	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		120	12	
	...NAVICULACEAE	NAVICULOID			
L	....AMPHIPRORA			0	
	....CALONEIS		20	2	
D	....NAVICULA		330	31	
	...NITZSCHIACEAE				
	....NITZSCHIA		120	12	
	...SURIRELLACEAE				
	....SURIRELLA		20	2	
		TOTALS	1,000	101	3.015=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.CRYPTOPHYCEAE	CRYPTOMONADS			
	..CRYPTOMONIOALES				
	...CRYPTOMONOOACEAE				
L	....CRYPTOMONAS			0	

ORDER 0.672
FAMILY 2.750
GENERA 3.015

06294700 BIGHORN RIVER AT BIGHORN, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAY 20, 1976
1210 HOURS
960 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		26	3	
D	....DICTYOSPHAERIUM		160	16	
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		66	7	
		TOTALS	250	26	1.267=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		40	4	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		13	1	
	....COCCONEIS		13	1	
	....RHOICOSPHENIA		26	3	
	...CYMBELLACEAE				
	....CYMBELLA		13	1	
	...DIATOMACEAE				
	....DIATOMA		40	4	
	...FRAGILARIACEAE				
	....ASTERIONELLA		40	4	
L	....FRAGILARIA			0	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		26	3	
	...NAVICULACEAE	NAVICULOID			
L	....CALONEIS			0	
D	....NAVICULA		360	37	
	...NITZSCHIACEAE				
	....NITZSCHIA		110	11	
	...SURIRELLACEAE				
	....SURIRELLA		40	4	
		TOTALS	710	73	2.507=DIVERSITY

PHYL/DIV 0.827
CLASS 0.827
ORDER 1.273
FAMILY 2.816
GENERA 3.011

JUNE 14, 1976
1140 HOURS
2,100 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		55	3	
		TOTALS	55	3	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		280	14	
	....RHOICOSPHENIA		280	14	
	...CYMBELLACEAE				
	....CYMBELLA		110	5	
	...DIATOMACEAE				
D	....DIATOMA		500	24	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		330	16	
	...NAVICULACEAE	NAVICULOID			
L	....CALONEIS			0	
D	....NAVICULA		330	16	
	...NITZSCHIACEAE				
	....NITZSCHIA		170	8	
		TOTALS	2,000	97	2.683=DIVERSITY

PHYL/DIV 0.179
CLASS 0.179
ORDER 0.179
FAMILY 2.520
GENERA 2.790

06294700 BIGHORN RIVER AT BIGHORN, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
JULY 19, 1976
1130 HOURS
3,200 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		100	3	
	...SCENEDESMACEAE				
	....SCENEDESMUS		50	2	
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		50	2	
		TOTALS	200	7	1.500=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
O	....CYCLOTELLA		550	17	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		100	3	
	....RHOICOSPHENIA		100	3	
	...CYMBELLACEAE				
	....CYMBELLA		350	11	
	...DIATOMACEAE				
	....DIATOMA		100	3	
	...FRAGILARIACEAE				
	....SYNEDRA		50	2	
	...GOMPHONEMATACEAE				
O	....GOMPHONEMA		550	17	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		300	9	
	...NITZSCHIACEAE				
O	....NITZSCHIA		860	27	
	...SURIRELLACEAE				
	....SURIRELLA		50	2	
		TOTALS	3,000	94	2.794=DIVERSITY

PHYL/DIV 0.337
CLASS 0.337
ORDER 1.032
FAMILY 2.988
GENERA 3.051

AUG. 16, 1976
1220 HOURS
8,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...MICRACTINIACEAE				
	....GOLENKINIA		150	2	
	...SCENEDESMACEAE				
	....SCENEDESMUS		580	7	
		TOTALS	730	9	0.722=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		440	5	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
O	....COCCONEIS		1,200	15	
	....RHOICOSPHENIA		870	11	
	...CYMBELLACEAE				
O	....CYMBELLA		1,200	15	
	...EUNOTIACEAE				
	....EUNOTIA		150	2	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		1,000	13	
	...NAVICULACEAE	NAVICULOID			
O	....NAVICULA		1,500	18	
	...NITZSCHIACEAE				
	....HANTZSCHIA		150	2	
	....NITZSCHIA		870	11	
		TOTALS	7,300	92	2.911=DIVERSITY

PHYL/DIV 0.439
CLASS 0.439
ORDER 0.737
FAMILY 2.825
GENERA 3.151

06294700 BIGHORN RIVER AT BIGHORN, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
SEP. 20, 1976
1015 HOURS
1,600 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		68	4	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		200	13	
	...CYMBELLACEAE				
D	....CYMBELLA		270	17	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		680	42	
	...NITZSCHIACEAE				
D	....NITZSCHIA		410	25	
		TOTALS	1,600	101	2.023=DIVERSITY

ORDER 0.250
FAMILY 2.023
GENERA 2.023

06294840 YELLOWSTONE RIVER AT MYERS, MT

LOCATION.--Lat 46°15'06", long 107°20'55", in SW¼SW¼SE¼ sec.21, T.6 N., R.35 E., Treasure County, Hydrologic Unit 10100001, at bridge on county road, 0.4 mi (0.6 km) northwest of Myers, 11.5 mi (18.5 km) downstream from Bighorn River, and at mile 267.9 (431.1 km).

DRAINAGE AREA.--37,674 mi^2 (97,576 km^2).

PERIOD OF RECORD.--Water years 1974 to current year.

REMARKS.--The water discharge is measured or computed by adding the discharge of Yellowstone River at Billings (station 06214500) to that of Bighorn River at Bighorn (station 06294700). Flow affected by reservoirs and diversions for irrigation upstream from station.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)
OCT										
20...	1445	8150	520	8.3	9.0	12.0	25	10.6	108	.8
NOV										
17...	1430	9270	640	8.4	4.0	5.5	4	11.4	100	.2
DEC										
15...	1530	8530	720	8.4	-2.5	1.0	10	13.0	101	.9
JAN										
28...	1715	7200	700	8.0	6.5	2.5	7	12.8	104	1.3
FEB										
27...	1145	8110	735	7.9	6.5	4.0	15	11.7	98	1.9
MAR										
15...	1345	8480	768	8.3	5.5	3.0	1	12.2	100	1.3
APR										
28...	1530	12700	725	7.8	7.0	6.0	50	11.2	98	--
MAY										
17...	1200	32400	385	8.3	26.5	14.0	120	9.4	100	1.8
JUN										
14...	1500	40300	320	8.2	12.5	12.0	50	9.6	98	.4
JUL										
20...	0930	18400	298	8.1	24.0	21.0	10	8.1	100	1.1
AUG										
16...	1515	10400	460	8.2	28.0	21.0	15	8.2	101	.1
SEP										
20...	1300	8480	490	8.4	20.5	16.0	10	9.4	104	.8

06294840 YELLOWSTONE RIVER AT MYERS, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	SODIUM AD-SORP-TION RATIO	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)
OCT										
20...	220	65	53	21	49	1.4	3.3	188	0	154
NOV										
17...	230	76	59	19	50	1.4	3.2	182	0	149
DEC										
15...	240	82	63	21	55	1.5	3.2	197	0	162
JAN										
28...	240	82	62	21	60	1.7	3.4	194	0	159
FEB										
27...	260	100	66	24	63	1.7	3.5	199	0	163
MAR										
15...	260	99	66	24	67	1.8	4.7	201	0	165
APR										
28...	250	98	62	24	66	1.8	3.7	190	0	156
MAY										
17...	140	34	36	12	29	1.1	2.3	128	0	105
JUN										
14...	110	31	28	10	18	.7	1.8	98	0	80
JUL										
20...	100	18	27	9.0	20	.9	2.1	106	0	87
AUG										
16...	170	46	43	14	34	1.2	2.8	145	0	119
SEP										
20...	180	50	46	17	39	1.2	3.0	164	0	135

DATE	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)
OCT									
20...	160	7.3	.4	10	397	.54	8740	.13	.09
NOV									
17...	170	8.2	.4	9.8	410	.56	10300	.20	.03
DEC									
15...	190	8.4	.4	11	449	.61	10300	.35	.04
JAN									
28...	200	9.1	.5	10	462	.63	8980	.51	.05
FEB									
27...	220	9.7	.4	10	495	.67	10800	.32	.02
MAR									
15...	220	10	.4	11	502	.68	11500	.34	.09
APR									
28...	240	9.6	.4	9.4	509	.69	17500	.30	.01
MAY									
17...	93	5.9	.2	12	254	.35	22200	.22	.10
JUN									
14...	79	5.5	.2	12	203	.28	22100	.15	.04
JUL									
20...	61	4.7	.3	10	187	.25	9290	.08	.00
AUG									
16...	99	6.3	.4	10	281	.38	7890	.11	.00
SEP									
20...	130	6.8	.5	9.9	333	.45	7620	.19	.04

06294840 YELLOWSTONE RIVER AT MYERS, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	DISSOLVED ORGANIC CARBON (C) (MG/L)	SUSPENDED ORGANIC CARBON (C) (MG/L)
OCT									
20...	1.0	1.1	1.2	.07	160	20	7.7	6.8	--
NOV									
17...	.19	.22	.42	.00	150	30	--	--	--
DEC									
15...	.35	.39	.74	.02	140	30	--	--	--
JAN									
28...	.41	.46	.97	.04	100	10	12	--	--
FEB									
27...	.47	.49	.81	.08	130	10	--	4.3	1.0
MAR									
15...	.57	.66	1.0	.07	150	60	--	--	--
APR									
28...	1.1	1.1	1.5	.12	230	0	--	5.1	2.1
MAY									
17...	1.0	1.1	1.3	.37	50	50	--	--	--
JUN									
14...	.14	.18	.33	.23	80	30	--	--	--
JUL									
20...	.13	.13	.21	.05	90	20		3.5	.3
AUG									
16...	.01	.01	.12	.06	180	30	--	--	--
SEP									
20...	.53	.57	.76	.04	140	20	--	--	--

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	DISSOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)
OCT											
20...	1445	630	20	5	5	10	10	0	1	--	0
JAN											
28...	1715	230	0	5	5	10	0	<10	1	0	0
APR											
28...	1530	2500	20	9	2	0	0	<10	0	0	0
JUL											
20...	0930	1200	20	6	6	0	0	<10	1	10	0

DATE	TOTAL COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	DISSOLVED LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)
OCT										
20...	20	8	750	<100	4	30	30	50	10	.2
JAN										
28...	20	2	220	<100	1	40	40	30	0	.1
APR										
28...	40	1	3600	<100	7	40	40	150	10	.0
JUL										
20...	20	1	1300	<100	0	30	30	50	0	.0

DATE	DISSOLVED MERCURY (HG) (UG/L)	TOTAL MOLYBDENUM (MO) (UG/L)	DISSOLVED MOLYBDENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DISSOLVED NICKEL (NI) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	DISSOLVED VANADIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT										
20...	.2	2	3	<50	7	1	1	1.9	30	10
JAN										
28...	.1	2	2	<50	2	2	2	1.7	10	10
APR										
28...	.0	1	1	<50	14	2	2	6.9	30	10
JUL										
20...	.0	1	0	<50	3	1	1	1.0	10	20

06294840 YELLOWSTONE RIVER AT MYERS, MT--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .062 MM
OCT						
20...	1445	12.0	8150	27	594	--
NOV						
17...	1430	5.5	9270	12	300	--
DEC						
15...	1530	1.0	8530	23	530	--
JAN						
28...	1715	2.5	7200	31	603	--
FEB						
27...	1145	4.0	8110	57	1250	--
MAR						
15...	1345	3.0	8480	57	1310	--
APR						
28...	1530	6.0	12700	192	6580	--
MAY						
17...	1200	14.0	32400	566	49500	--
JUN						
14...	1500	12.0	40300	311	33800	--
JUL						
20...	0930	21.0	18400	100	4970	60
AUG						
16...	1515	21.0	10400	52	1460	76
SEP						
20...	1300	16.0	8480	42	962	77

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON

Date	Length of exposure (days)	Biomass (g/m^2) Dry weight	Ash weight	Chlorophyll a (mg/m^2)	Chlorophyll b (mg/m^2)	Biomass pigment ratio	Sampling method
Oct 20	27	6.20	5.60	12.0	1.70	53	Polyethylene strip
Aug 16	27	10.2	8.62	7.07	.520	230	

PHYTOPLANKTON
OCT. 20, 1975
1445 HOURS
6,400 CELLS/ML

ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
CHLOROPHYTA	GREEN ALGAE			
.CHLOROPHYCEAE				
..CHLOROCOCCALES				
...OOCYSTACEAE				
....ANKISTRODESMUS		110	2	
...SCENEDESMACEAE				
....ACTINASTRUM		900	14	
	TOTALS	1,000	16	0.503=DIVERSITY
CHRYSOPHYTA				
.BACILLARIOPHYCEAE	DIATOMS			
..CENTRALES	CENTRIC			
...COSCINODISCACEAE				
....CYCLOTELLA		450	7	
..PENNALES	PENNATE			
...ACHNANTHACEAE				
....ACHNANTHES		110	2	
....COCCONEIS		110	2	
....RHOICOSPHENIA		340	5	
...CYMBELLACEAE				
....CYMBELLA		780	12	
...GOMPHONEMATACEAE				
....GOMPHONEMA		560	9	
...NAVICULACEAE	NAVICULOID			
D ....NAVICULA		1,900	30	
...NITZSCHIACEAE				
D ....NITZSCHIA		1,100	18	
	TOTALS	5,400	85	2.528=DIVERSITY

PHYL/DIV	0.629
CLASS	0.629
ORDER	0.978
FAMILY	2.718
GENERA	2.838

06294840 YELLOWSTONE RIVER AT MYERS, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
NOV. 17, 1975
1430 HOURS
1,700 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		39	2	
L	....MELOSIRA			0	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		39	2	
	....COCCONEIS		120	7	
	....RHOICOSPHENIA		39	2	
	...CYMBELLACEAE				
	....CYMBELLA		120	7	
L	....EPITHEMIA			0	
	...DIATOMACEAE				
	....DIATOMA		39	2	
	...EUNOTIACEAE				
L	....EUNOTIA			0	
	...FRAGILARIACEAE				
	....SYNEDRA		39	2	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		160	9	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		430	26	
	...NITZSCHIACEAE				
D	....NITZSCHIA		660	40	
	...SURIRELLACEAE				
L	....SURIRELLA			0	
		TOTALS	1,700	99	2.518=DIVERSITY

ORDER 0.159
FAMILY 2.359
GENERA 2.518

DEC. 15, 1975
1530 HOURS
1,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..ZYGNEMATALES				
	...DESMIDIACEAE	PLACODERM DESMIDS			
L	....STAURASTRUM			0	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		40	4	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
L	....COCCONEIS			0	
L	....RHOICOSPHENIA			0	
	...CYMBELLACEAE				
	....CYMBELLA		80	8	
	...DIATOMACEAE				
D	....DIATOMA		160	15	
	...FRAGILARIACEAE				
D	....SYNEDRA		240	23	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		40	4	
	...NAVICULACEAE	NAVICULOID			
L	....CALONEIS			0	
D	....NAVICULA		440	42	
	...NITZSCHIACEAE				
	....NITZSCHIA		40	4	
	...SURIRELLACEAE				
L	....CYMATOPLEURA			0	
		TOTALS	1,000	100	2.256=DIVERSITY

ORDER 0.235
FAMILY 2.256
GENERA 2.256

06294840 YELLOWSTONE RIVER AT MYERS, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
JAN. 28, 1976
1715 HOURS
750 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		50	7	
L	....RHOICOSPHENIA			0	
	...CYMBELLACEAE				
L	....AMPHORA			0	
	....CYMBELLA		50	7	
	...DIATOMACEAE				
	....DIATOMA		100	13	
	...FRAGILARIACEAE				
L	....SYNEDRA			0	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		50	7	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		500	67	
		TOTALS	750	101	1.559=DIVERSITY

FAMILY 1.559
GENERA 1.559

FEB. 27, 1976
1145 HOURS
3,200 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...FRAGILARIACEAE				
	....H.ARCUS		41	1	
	...ACHNANTHACEAE				
	....ACHNANTHES		120	4	
	....COCCONEIS		120	4	
	....RHOICOSPHENIA		82	3	
	...CYMBELLACEAE				
	....CYMBELLA		330	10	
L	....EPITHEMIA			0	
	...DIATOMACEAE				
	....DIATOMA		290	9	
	...FRAGILARIACEAE				
	....SYNEDRA		290	9	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		580	18	
	...NAVICULACEAE	NAVICULOID			
	....GYROSIGMA		41	1	
D	....NAVICULA		1,000	32	
	...NITZSCHIACEAE				
	....NITZSCHIA		290	9	
		TOTALS	3,200	100	2.903=DIVERSITY

FAMILY 2.664
GENERA 2.903

06294840 YELLOWSTONE RIVER AT MYERS, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

MAR. 15, 1976
1345 HOURS
1,200 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		29	2	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		14	1	
	....COCCONEIS		29	2	
O	....RHOICOSPHENIA		250	20	
	...CYMBELLACEAE				
	....CYMBELLA		86	7	
	...DIATOMACEAE				
	....DIATOMA		120	10	
	...FRAGILARIACEAE				
	....FRAGILARIA		29	2	
	....SYNEDRA		29	2	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		250	20	
	...NAVICULACEAE	NAVICULOID			
O	....NAVICULA		330	27	
	...NITZSCHIACEAE				
	....NITZSCHIA		58	5	
		TOTALS	1,200	98	2.838=DIVERSITY

ORDER 0.162
FAMILY 2.613
GENERA 2.838

APR. 28, 1976
1530 HOURS
2,600 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		19	1	
		TOTALS	19	1	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...FRAGILARIACEAE				
	....H.ARCUS		19	1	
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		110	4	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		110	4	
	....COCCONEIS		37	1	
	....RHOICOSPHENIA		37	1	
	...CYMBELLACEAE				
	....CYMBELLA		340	13	
	...DIATOMACEAE				
	....DIATOMA		150	6	
	...FRAGILARIACEAE				
	....ASTERIONELLA		56	2	
	....SYNEDRA		110	4	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		280	11	
	...NAVICULACEAE	NAVICULOID			
L	....GYROSIGMA			0	
O	....NAVICULA		710	28	
	...NITZSCHIACEAE				
	....NITZSCHIA		350	14	
	...SURIRELLACEAE				
	....SURIRELLA		170	7	
		TOTALS	2,500	96	3.133=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
	..CHRYSOMONADALES				
	...CHROMULINACEAE				
	....CHRYSOCOCCUS		37	1	
		TOTALS	37	1	0.000=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
	....TRACHELOMONAS		19	1	
		TOTALS	19	1	0.000=DIVERSITY

PHYL/DIV 0.125
CLASS 0.234
ORDER 0.553
FAMILY 3.116
GENERA 3.276

06294840 YELLOWSTONE RIVER AT MYERS, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAY 17, 1976
1200 HOURS
11,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT
	CHRYSOPHYTA			
	.BACILLARIOPHYCEAE	DIATOMS		
	..PENNALES	PENNATE		
	...ACHNANTHACEAE			
D	....ACHNANTHES		1,900	18
	...CYMBELLACEAE			
	....CYMBELLA		1,300	12
	...DIATOMACEAE			
	....DIATOMA		380	4
	...EUNOTIACEAE			
	....EUNOTIA		190	2
	...FRAGILARIACEAE			
	....FRAGILARIA		380	4
	....SYNEDRA		1,100	11
	...GOMPHONEMATACEAE			
	....GOMPHONEMA		570	5
	...NAVICULACEAE	NAVICULOID		
D	....NAVICULA		3,000	29
	...NITZSCHIACEAE			
	....NITZSCHIA		950	9
	...SURIRELLACEAE			
	....CYMATOPLEURA		190	2
	....SURIRELLA		570	5
		TOTALS	11,000	101

2.995=DIVERSITY

FAMILY 2.821
GENERA 2.995

JUNE 14, 1976
1500 HOURS
830 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT
	CHRYSOPHYTA			
	.BACILLARIOPHYCEAE	DIATOMS		
	..PENNALES	PENNATE		
	...ACHNANTHACEAE			
	....ACHNANTHES		38	5
	....COCCONEIS		38	5
	....RHOICOSPHENIA		38	5
	...CYMBELLACEAE			
	....CYMBELLA		38	5
	....EPITHEMIA		38	5
	...DIATOMACEAE			
D	....DIATOMA		190	23
	...GOMPHONEMATACEAE			
	....GOMPHONEMA		38	5
	...NAVICULACEAE	NAVICULOID		
D	....NAVICULA		380	45
	...NITZSCHIACEAE			
	....NITZSCHIA		38	5
		TOTALS	830	103

2.422=DIVERSITY

FAMILY 2.115
GENERA 2.422

06294840 YELLOWSTONE RIVER AT MYERS, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
JULY 20, 1976
0930 HOURS
2,200 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....OOCYSTIS		110	5	
	...SCENEDESMACEAE				
	....SCENEDESMUS		110	5	
		TOTALS	220	10	1.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...FRAGILARIACEAE				
	....H.ARCUS		28	1	
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		83	4	
	....MELOSIRA		110	5	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		83	4	
	....COCCONEIS		56	2	
	....RHOICOSPHENIA		28	1	
	...CYMBELLACEAE				
	....CYMBELLA		220	10	
	...FRAGILARIACEAE				
	....ASTERIONELLA		56	2	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		390	17	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		280	12	
	...NITZSCHIACEAE				
D	....NITZSCHIA		670	30	
		TOTALS	2,000	88	2.808=DIVERSITY

PHYL/DIV 0.469
CLASS 0.469
ORDER 0.976
FAMILY 2.900
GENERA 3.096

AUG. 16, 1976
1515 HOURS
5,600 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		180	3	
	....OOCYSTIS		90	2	
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		90	2	
		TOTALS	360	7	1.500=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		720	13	
D	....MELOSIRA		900	16	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		270	5	
	....COCCONEIS		180	3	
	....RHOICOSPHENIA		90	2	
	...CYMBELLACEAE				
	....CYMBELLA		270	5	
	...DIATOMACEAE				
	....DIATOMA		90	2	
	...FRAGILARIACEAE				
	....SYNEDRA		90	2	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		450	8	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		810	15	
	...NITZSCHIACEAE				
D	....NITZSCHIA		1,400	24	
		TOTALS	5,200	95	2.971=DIVERSITY

PHYL/DIV 0.345
CLASS 0.345
ORDER 1.233
FAMILY 2.747
GENERA 3.221

06294840 YELLOWSTONE RIVER AT MYERS, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
SEP. 20, 1976
1300 HOURS
2,700 CELLS/ML

	ORGANISM NAME	COMMON NAME		CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE				
	.CHLOROPHYCEAE					
	..CHLOROCOCCALES					
	...OOCYSTACEAE					
	....ANKISTRODESMUS			260	9	
			TOTALS	260	9	0.000=DIVERSITY
	CHRYSOPHYTA					
	.BACILLARIOPHYCEAE	DIATOMS				
	..CENTRALES	CENTRIC				
	...COSCINODISCACEAE					
	....CYCLOTELLA			260	9	
	..PENNALES	PENNATE				
	...CYMBELLACEAE					
	....AMPHORA			86	3	
D	....CYMBELLA			510	19	
	...DIATOMACEAE					
	....DIATOMA			170	6	
	...GOMPHONEMATACEAE					
	....GOMPHONEMA			86	3	
	...NAVICULACEAE	NAVICULOID				
D	....NAVICULA			940	34	
	...NITZSCHIACEAE					
D	....NITZSCHIA			430	16	
			TOTALS	2,500	90	2.378=DIVERSITY

PHYL/DIV 0.449
CLASS 0.449
ORDER 0.884
FAMILY 2.474
GENERA 2.604

06294940 SARPY CREEK NEAR HYSHAM, MT

LOCATION.--Lat 46°14'12", long 107°08'03", in SE¼SE¼ sec.30, T.6 N., R.37 E., Treasure County, Hydrologic Unit 10100001, on left bank 100 ft (30 m) upstream from bridge on FAS Route 415, 0.8 mi (1.3 km) upstream from Hysham Canal, and 5.5 mi (8.8 km) southeast of Hysham.

DRAINAGE AREA.--453 mi^2 (1,173 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1973 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,680 ft (817 m), from topographic map.

REMARKS.--Water-discharge records fair except those for winter period, which are poor. Diversions for irrigation of about 870 acres (3.52 km^2) above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 428 ft^3/s (12.1 m^3/s) Mar. 4, 1975, gage height, 12.43 ft (3.789 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 20 ft^3/s (0.57 m^3/s) Feb. 28, gage height, 5.58 ft (1.701 m), backwater from ice, no peak above base of 100 ft^3/s (2.83 m^3/s); no flow at times each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.71	.80	.90	2.8	11	1.3	5.2	1.4	1.3		
2	0	.62	.80	.80	3.0	10	2.0	5.1	1.2	1.1		
3	0	.62	.80	.80	2.6	9.5	3.8	5.2	1.1	1.1		
4	0	.71	.80	.80	2.2	9.0	3.5	5.3	.96	.96		
5	.01	.62	.80	.80	2.0	8.5	3.1	5.8	.88	.62		
6	.01	.71	.80	.80	1.8	8.0	3.7	6.3	.68	.45		
7	.01	.71	.80	.80	2.0	7.5	3.1	6.3	1.5	.33		
8	.02	.62	.80	.80	2.2	7.0	3.0	6.1	2.1	.29		
9	.01	.62	1.5	.80	2.5	6.0	3.0	4.6	1.7	.05		
10	.01	.71	1.0	.80	2.7	5.5	3.1	3.7	1.2	0		
11	.01	.79	.80	.80	2.9	5.0	2.9	4.9	1.1	0		
12	.01	.71	.80	1.0	3.1	4.5	2.5	5.2	1.1	0		
13	.02	.79	.80	1.4	3.4	5.0	3.0	6.0	.96	0		
14	.05	.96	.80	1.2	3.7	6.0	3.8	5.7	1.2	0		
15	.37	.96	.80	1.0	4.0	7.0	5.7	5.8	1.5	0		
16	.37	1.1	.80	.80	4.5	7.5	5.8	5.2	4.3	0		
17	.33	1.2	.80	3.0	5.0	7.9	5.5	5.2	5.7	0		
18	.37	1.5	.80	2.5	6.0	8.1	5.8	4.7	6.6	0		
19	.29	1.8	.80	2.0	7.0	8.2	5.3	4.4	4.7	0		
20	.29	1.8	.80	1.5	5.0	7.9	6.1	3.8	3.7	0		
21	.45	1.5	.80	1.5	4.5	7.9	6.1	4.2	3.3	0		
22	1.8	1.4	.80	2.0	4.0	6.7	5.8	3.5	3.1	0		
23	2.0	1.3	.80	2.5	4.5	5.6	5.7	1.1	2.9	0		
24	1.3	1.2	.80	2.0	5.0	6.3	5.6	.21	2.9	0		
25	1.7	1.0	.80	1.5	5.5	8.7	5.5	.21	2.7	0		
26	1.4	.80	1.0	2.0	6.0	6.7	5.3	.21	2.2	0		
27	1.1	.80	1.2	2.2	8.0	5.8	6.1	1.9	2.2	0		
28	.96	.80	1.2	2.4	10	5.2	6.0	2.2	1.9	0		
29	.79	.80	1.1	2.6	14	4.4	5.7	2.0	1.8	0		
30	.79	.80	1.0	3.0	---	3.5	5.4	2.0	1.5	0		
31	.79	---	1.0	2.6	---	3.5	---	1.5	---	0		---
TOTAL	15.26	28.66	27.40	47.60	129.9	213.4	134.2	123.53	68.28	6.20	0	0
MEAN	.49	.96	.88	1.54	4.48	6.88	4.47	3.98	2.28	.20	0	0
MAX	2.0	1.8	1.5	3.0	14	11	6.3	6.3	6.6	1.3	0	0
MIN	0	.62	.80	.80	1.8	3.5	1.3	.21	.88	0	0	0
AC-FT	30	57	54	94	258	423	266	245	135	12	0	0

CAL YR 1975 TOTAL 7400.88 MEAN 20.3 MAX 390 MIN 0 AC-FT 14680
WTR YR 1976 TOTAL 794.43 MEAN 2.17 MAX 14 MIN 0 AC-FT 1580

06294940 SARPY CREEK NEAR HYSHAM, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

REMARKS.--Flow affected by diversions for irrigation upstream from station.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
14...	1330	.02	4300	8.4	5.0	7.0	7	1.8	16	--	1300	610
NOV												
04...	1230	.62	2650	8.3	21.5	6.5	4	8.6	76	1.5	430	0
DEC												
01...	1430	.77	2360	8.1	.0	.5	4	10.0	76	.0	540	0
JAN												
13...	1100	1.4	2450	8.0	16.0	.5	3	10.2	77	1.2	540	0
FEB												
06...	1030	1.8	2800	8.0	-8.0	.0	7	10.4	79	.9	620	150
MAR												
01...	1300	11	2740	7.8	-7.0	.0	10	12.0	91	.3	920	500
APR												
05...	1100	2.9	2720	8.3	20.0	9.0	10	10.1	96	.6	850	380
MAY												
03...	1245	5.2	3300	8.3	19.5	10.5	15	10.0	101	1.4	1100	570
JUN												
11...	1005	1.0	3120	8.2	20.5	19.0	4	8.6	102	2.0	820	330
JUL												
09...	0910	.06	2240	8.2	22.5	19.5	4	4.0	48	1.8	590	140

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
OCT											
14...	190	210	880	10	12	886	0	2500	33	.4	12
NOV											
04...	64	65	380	8.0	9.8	605	0	750	14	.4	6.9
DEC											
01...	90	76	370	6.9	8.7	689	0	740	14	.4	11
JAN											
13...	93	74	370	7.0	7.2	665	0	750	13	.4	12
FEB											
06...	95	93	390	6.8	8.2	553	7	940	15	.4	11
MAR											
01...	120	150	330	4.7	10	505	0	1200	11	.3	7.1
APR											
05...	110	140	390	5.8	9.4	572	0	1200	15	.3	5.4
MAY											
03...	120	190	460	6.1	11	626	0	1500	15	.4	3.1
JUN											
11...	80	150	420	6.4	10	536	30	1200	15	.3	.5
JUL											
09...	56	110	430	7.7	11	552	0	970	14	.4	.5

06294940 SARPY CREEK NEAR HYSHAM, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT											
14...	4280	5.82	.23	.00	.01	.65	.66	.66	.05	610	380
NOV											
04...	1590	2.16	2.66	.00	.01	.99	1.0	1.0	.02	290	70
DEC											
01...	1650	2.24	3.43	.00	.02	.59	.61	.61	.00	280	30
JAN											
13...	1650	2.24	6.28	.06	.04	.52	.56	.62	.00	260	10
FEB											
06...	1830	2.49	8.89	.07	.00	.59	.59	.66	.02	300	40
MAR											
01...	2080	2.83	61.8	.02	.04	.65	.69	.71	.04	410	20
APR											
05...	2150	2.92	16.8	.02	.03	.82	.85	.87	.02	370	20
MAY											
03...	2610	3.55	36.9	.01	.01	.89	.90	.91	.07	570	40
JUN											
11...	2170	2.95	5.86	.03	.04	.56	.60	.63	.07	510	10
JUL											
09...	1860	2.53	.30	.01	.13	.59	.72	.73	.04	450	70

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BISMUTH (BI) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)
OCT											
14...	1330	370	--	6	--	--	10	--	--	<0	--
NOV											
04...	1230	160	10	1	1	70	10	0	<20	<10	0
JAN											
13...	1100	110	--	0	--	--	0	--	--	<10	--
APR											
05...	1100	320	--	0	--	--	10	--	--	<10	--
JUL											
09...	0910	180	--	4	--	--	0	--	--	10	--

06294940 SARPY CREEK NEAR HYSHAM, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED GALLIUM (GA) (UG/L)	DIS-SOLVED GER-MANIUM (GE) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)
OCT										
14...	20	--	--	20	--	--	--	2500	100	--
NOV										
04...	4	0	<15	10	1	<10	<20	250	100	3
JAN										
13...	0	--	--	<10	--	--	--	170	<100	--
APR										
05...	20	--	--	<10	--	--	--	560	<100	--
JUL										
09...	0	--	--	10	--	--	--	280	<100	--

DATE	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)
OCT										
14...	70	--	6000	--	.0	--	4	--	100	--
NOV										
04...	50	40	40	50	.1	.0	2	2	50	5
JAN										
13...	30	--	20	--	.1	--	1	--	<50	--
APR										
05...	40	--	110	--	.0	--	1	--	<50	--
JUL										
09...	30	--	230	--	.0	--	3	--	<50	--

DATE	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED STRON-TIUM (SR) (UG/L)	DIS-SOLVED TIN (SN) (UG/L)	DIS-SOLVED TI-TANIUM (TI) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	DIS-SOLVED ZIR-CONIUM (ZR) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
14...	0	--	--	--	--	--	--	--	120	--
NOV										
04...	0	0	<2	1500	<15	<20	1.9	<20	50	10
JAN										
13...	0	--	--	--	--	--	--	--	8	--
APR										
05...	0	--	--	--	--	--	--	--	10	--
JUL										
09...	0	--	--	--	--	--	--	--	20	--

DATE	TIME	DIS-SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS-PENDED GROSS ALPHA AS U-NAT. (UG/L)	DIS-SOLVED GROSS BETA AS CS-137 (PC/L)	SUS-PENDED GROSS BETA AS CS-137 (PC/L)	DIS-SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS-PENDED GROSS BETA AS SR90 /Y90 (PC/L)	DIS-SOLVED RA-226 (RADON METHOD) (PC/L)	DIS-SOLVED URANIUM (DIRECT FLUORO-METRIC) (PC/L)	TOTAL FILT-RABLE RESIDUE (MG/L)	TOTAL NON-FILT-RABLE RESIDUE (MG/L)
NOV											
04...	1230	<22	<.4	32	.8	26	.7	.03	5.3	1700	4

06294940 SARPY CREEK NEAR HYSHAM, MT--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
OCT					
14...	1330	7.0	.02	128	.01
NOV					
04...	1230	6.5	.62	24	.04
DEC					
01...	1430	.5	.77	8	.02
JAN					
13...	1100	.5	1.4	45	.17
FEB					
06...	1030	.0	1.8	20	.10
MAR					
01...	1300	.0	11	133	4.0
APR					
05...	1100	9.0	2.9	24	.19
MAY					
03...	1245	10.5	5.2	109	1.5
JUN					
11...	1005	19.0	1.0	37	.10
JUL					
09...	0910	19.5	.06	25	.00

06294980 EAST FORK ARMELLS CREEK NEAR COLSTRIP, MT

LOCATION.--Lat 45°58'42", long 106°38'38", in SE¼SW¼SW¼ sec.28, T.3 N., R.41 E., Rosebud County, Hydrologic Unit 10100001, on private road bridge, 0.9 mi (1.4 km) downstream from Corral Creek, and 6.7 mi (10.8 km) north of Colstrip.

DRAINAGE AREA.--155 mi^2 (401 km^2).

PERIOD OF RECORD.--Water years 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
16...	1100	3.7	2520	8.3	11.5	6.0	3	11.1	100	1.2	1100	760
NOV												
06...	1000	1.4	3990	8.3	11.5	5.0	5	10.6	93	.1	1800	1400
DEC												
02...	1300	1.7	4600	7.9	1.5	.5	2	8.7	67	.1	2100	1600
JAN												
06...	1400	1.1	4820	7.5	-18.0	.0	4	9.2	70	.3	2000	1500
FEB												
03...	1100	4.3	3780	7.9	-6.0	.0	6	10.9	83	.7	1600	1200
MAR												
02...	1100	2.3	3750	8.1	-18.0	.0	10	--	--	1.9	1800	1400
APR												
07...	1200	2.4	3630	8.0	16.5	12.5	7	8.8	92	1.9	1800	1500
MAY												
06...	0930	5.4	3200	8.0	10.0	10.5	5	9.0	89	1.6	1500	1200
JUN												
01...	1430	1.4	3890	8.2	26.5	24.5	4	--	--	.8	1800	1500
JUL												
08...	1130	1.6	3290	8.2	26.5	24.0	10	10.3	137	3.1	1900	1600

06294980 EAST FORK ARMELLS CREEK NEAR COLSTRIP, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	SODIUM AD-SORP-TION RATIO	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)
OCT											
16...	150	170	220	2.9	16	379	0	1200	46	.5	9.9
NOV											
06...	230	300	370	3.8	22	549	0	2100	66	.6	7.2
DEC											
02...	280	340	390	3.7	23	621	0	2300	64	.5	16
JAN											
06...	280	310	410	4.0	21	612	0	2300	50	.4	17
FEB											
03...	240	240	300	3.3	20	419	0	1900	48	.7	17
MAR											
02...	230	290	310	3.2	17	495	0	2000	52	.6	7.8
APR											
07...	230	300	310	3.2	21	437	0	2000	51	.6	1.4
MAY											
06...	200	250	300	3.3	18	425	0	1800	75	.5	4.7
JUN											
01...	210	320	380	3.9	17	434	0	2300	49	.4	2.4
JUL											
08...	210	330	320	3.2	18	402	0	2100	49	.3	2.5

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT											
16...	2000	2.72	20.0	.04	.03	.70	.73	.77	.02	540	70
NOV											
06...	3370	4.58	12.7	.06	.28	1.3	1.6	1.7	.03	810	20
DEC											
02...	3720	5.06	17.1	.09	.59	1.2	1.8	1.9	.00	830	50
JAN											
06...	3690	5.02	11.0	.11	1.1	2.0	3.1	3.2	.02	740	50
FEB											
03...	2970	4.04	34.5	.52	.93	.47	1.4	1.9	.12	910	50
MAR											
02...	3150	4.28	19.6	.43	.33	1.4	1.7	2.1	.03	830	60
APR											
07...	3130	4.26	20.3	.88	.13	1.5	1.6	2.5	.04	830	60
MAY											
06...	2860	3.89	41.7	.02	.09	1.0	1.1	1.1	.33	720	60
JUN											
01...	3490	4.75	13.2	.02	.02	.81	.83	.85	.06	630	40
JUL											
08...	3230	4.39	14.0	.12	.00	.89	.89	1.0	.05	970	60

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BISMUTH (BI) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)
OCT											
16...	1100	130	--	0	--	--	10	--	--	10	--
NOV											
06...	1000	190	30	1	1	60	0	10	<30	<10	0
JAN											
06...	1400	140	--	1	--	--	10	--	--	10	--
APR											
07...	1200	170	--	0	--	--	10	--	--	10	--
JUL											
08...	1130	30	--	5	--	--	0	--	--	10	--

06294980 EAST FORK ARMELLS CREEK NEAR COLSTRIP, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL CHROMIUM (CR) (UG/L)	DIS-SOLVED CHROMIUM (CR) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED GALLIUM (GA) (UG/L)	DIS-SOLVED GERMANIUM (GE) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)
OCT										
16...	30	--	--	10	--	--	--	210	<100	--
NOV										
06...	4	2	<30	10	0	<20	<30	480	<100	4
JAN										
06...	0	--	--	10	--	--	--	270	<100	--
APR										
07...	10	--	--	10	--	--	--	670	<100	--
JUL										
08...	0	--	--	10	--	--	--	200	<100	--

DATE	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYBDENUM (MO) (UG/L)	DIS-SOLVED MOLYBDENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)
OCT										
16...	80	--	40	--	.3	--	3	--	50	--
NOV										
06...	100	100	370	250	.0	.0	3	2	50	4
JAN										
06...	90	--	750	--	.4	--	3	--	<50	--
APR										
07...	130	--	30	--	.0	--	2	--	<50	--
JUL										
08...	80	--	80	--	.0	--	2	--	100	--

DATE	TOTAL SELENIUM (SE) (UG/L)	DIS-SOLVED SELENIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED STRONTIUM (SR) (UG/L)	DIS-SOLVED TIN (SN) (UG/L)	DIS-SOLVED TITANIUM (TI) (UG/L)	DIS-SOLVED VANADIUM (V) (UG/L)	DIS-SOLVED ZIRCONIUM (ZR) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
16...	0	--	--	--	--	--	--	--	10	--
NOV										
06...	0	0	<2	5000	<30	<30	1.6	<30	40	20
JAN										
06...	0	--	--	--	--	--	--	--	30	--
APR										
07...	1	--	--	--	--	--	--	--	10	--
JUL										
08...	1	--	--	--	--	--	--	--	0	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
OCT					
16...	1100	6.0	3.7	14	.14
NOV					
06...	1000	5.0	1.4	93	.35
DEC					
02...	1300	.5	1.7	4	.02
JAN					
06...	1400	.0	1.1	48	.14
FEB					
03...	1100	.0	4.3	8	.09
MAR					
02...	1100	.0	2.3	27	.17
APR					
07...	1200	12.5	2.4	15	.10
MAY					
06...	0930	10.5	5.4	35	.51
JUN					
01...	1430	24.5	1.4	73	.28
JUL					
08...	1130	24.0	1.6	15	.06

06294991 WEST FORK ARMELLS CREEK NEAR FORSYTH, MT

LOCATION.--Lat 46°05'10", long 106°46'09", in SW¼SW¼NW¼ sec.21, T.4 N., R.40 E., Rosebud County, Hydrologic Unit 10100001, 0.7 mi (1.1 km) upstream from mouth, and 13.5 mi (21.7 km) southwest of Forsyth.

DRAINAGE AREA.--148 mi² (383 km²).

PERIOD OF RECORD.--Water years 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
16...	0815	.01	6740	8.6	9.0	5.0	20	11.6	101	1.7	1600	1200
NOV												
05...	1230	.03	5990	8.4	28.0	9.0	20	10.8	103	1.7	1400	1000
FEB												
03...	0930	.80	3800	7.8	-6.5	.0	4	10.9	83	.8	870	580
MAR												
02...	0830	.50	5820	7.9	-15.0	.0	4	13.2	100	1.1	1700	1000
APR												
07...	0930	.68	5700	8.1	13.0	12.0	10	8.8	91	.8	1700	1100
MAY												
06...	1245	2.2	5200	8.1	15.0	15.0	7	8.8	97	1.0	1400	960
JUN												
04...	0900	.10	6000	8.1	17.5	19.0	10	8.5	101	1.4	1600	1200

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
OCT											
16...	140	300	1200	13	16	411	6	3800	44	.2	1.0
NOV											
05...	160	250	980	11	15	486	11	3100	39	.2	3.0
FEB											
03...	150	120	550	8.1	11	353	0	1700	18	.3	11
MAR											
02...	250	250	920	9.8	12	749	0	3000	31	.4	9.4
APR											
07...	250	260	940	9.9	12	709	0	3000	27	.3	7.9
MAY											
06...	200	230	930	11	15	593	0	2900	81	.3	6.3
JUN											
04...	160	280	1100	12	15	481	0	3200	29	.3	3.8

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)
OCT											
16...	5710	7.77	.15	.00	.08	1.6	1.7	1.7	.04	690	80
NOV											
05...	4800	6.53	.39	.00	.03	1.4	1.4	1.4	.05	500	30
FEB											
03...	2730	3.71	5.90	.33	.03	.83	.86	1.2	.02	330	60
MAR											
02...	4840	6.58	6.53	.00	.04	1.2	1.2	1.2	.00	520	40
APR											
07...	4850	6.60	8.90	.00	.02	.98	1.0	1.0	.02	550	20
MAY											
06...	4660	6.34	27.7	.00	.04	.86	.90	.90	.06	560	40
JUN											
04...	5030	6.84	1.36	.05	.02	.76	.78	.83	.04	530	50

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	DISSOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	DISSOLVED BARIUM (BA) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	DISSOLVED BISMUTH (BI) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)
OCT											
16...	0815	80	--	2	--	--	10	--	--	10	--
NOV											
05...	1230	300	10	1	1	20	10	10	<40	10	0
APR											
07...	0930	280	--	0	--	--	0	--	--	<10	--

06294991 WEST FORK ARMELLS CREEK NEAR FORSYTH, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL CHROMIUM (CR) (UG/L)	DIS-SOLVED CHROMIUM (CR) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED GALLIUM (GA) (UG/L)	DIS-SOLVED GERMANIUM (GE) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)
OCT										
16...	20	--	--	20	--	--	--	230	0	--
NOV										
05...	10	10	<40	20	1	<30	<50	920	<100	2
APR										
07...	20	--	--	10	--	--	--	560	<100	--

DATE	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYBDENUM (MO) (UG/L)	DIS-SOLVED MOLYBDENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)
OCT										
16...	10	--	70	--	.0	--	1	--	0	--
NOV										
05...	60	50	50	40	.1	.1	0	2	150	4
APR										
07...	60	--	130	--	.0	--	1	--	<50	--

DATE	TOTAL SELENIUM (SE) (UG/L)	DIS-SOLVED SELENIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED STRONTIUM (SR) (UG/L)	DIS-SOLVED TIN (SN) (UG/L)	DIS-SOLVED TITANIUM (TI) (UG/L)	DIS-SOLVED VANADIUM (V) (UG/L)	DIS-SOLVED ZIRCONIUM (ZR) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
16...	0	--	--	--	--	--	--	--	10	--
NOV										
05...	0	0	<4	1700	<40	<40	1.7	<50	40	20
APR										
07...	0	--	--	--	--	--	--	--	10	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
OCT					
16...	0815	5.0	.01	50	.00
NOV					
05...	1230	9.0	.03	136	.01
FEB					
03...	0930	.0	.80	9	.02
MAR					
02...	0830	.0	.50	11	.01
APR					
07...	0930	12.0	.68	157	.29
MAY					
06...	1245	15.0	2.2	96	.57
JUN					
04...	0900	19.0	.10	33	.01

06294995 ARMELLS CREEK NEAR FORSYTH, MT

LOCATION.--Lat 46°14'59", long 106°48'22", in SE¼NW¼NE¼ sec.26 T.6 N., R.39 E., Rosebud County, Hydrologic Unit 10100001, on right bank 300 ft (90 m) upstream from bridge on Interstate Highway I-94, 2 mi (3 km) upstream from mouth, and 6 mi (10 km) southwest of Forsyth.

DRAINAGE AREA.--370 mi^2 (958 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1974 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,560 ft (780 m), from topographic map.

REMARKS.--Water-discharge records fair except those for winter period, which are poor. Diversions of about 200 acres (809,000 m^2) above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 500 ft^3/s (14.2 m^3/s) Jan. 21, 1975, gage height, 4.8 ft (1.46 m); maximum gage height, 5.84 ft (1.780 m) Feb. 25, 1975 (backwater from ice); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 33 ft^3/s (0.93 m^3/s) June 17, gage height, 2.71 ft (0.826 m), no peak above base of 130 ft^3/s (3.68 m^3/s), maximum gage height observed, 3.19 ft (0.972 m) Feb. 11 (backwater from ice); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.13	1.8	.40	1.6	14	6.5	3.1	6.4	1.9	.98	0	.05
2	.15	1.7	.90	1.5	21	6.0	3.3	4.0	1.8	.73	.18	.04
3	.15	1.7	1.1	1.5	18	5.0	3.3	3.3	1.4	.49	.37	.04
4	.17	1.4	1.2	1.5	16	4.5	3.3	2.9	1.1	.37	.01	.04
5	.17	2.1	1.3	1.5	14	4.0	4.0	3.3	1.4	.25	0	.11
6	.19	1.3	1.3	1.5	12	3.5	4.0	9.4	.98	.59	0	.07
7	.19	1.3	1.3	1.3	10	3.0	3.5	15	1.1	.76	0	.09
8	.31	1.3	1.4	1.1	11	2.5	2.4	8.3	.98	.15	0	.05
9	.49	1.4	1.6	1.0	12	4.0	2.4	5.4	1.1	.13	0	.04
10	.49	1.3	1.5	.80	14	9.0	2.2	4.7	1.1	.09	0	.04
11	.43	1.5	1.3	.90	15	14	2.2	4.7	.85	1.8	.02	.05
12	.37	1.4	1.2	.90	17	12	2.2	5.4	2.9	.49	.05	.07
13	1.2	1.3	1.2	1.2	18	9.0	2.2	5.4	2.6	.46	.64	.07
14	2.2	1.3	1.2	1.4	19	5.0	2.9	11	3.6	.31	.79	.05
15	1.1	1.5	1.1	1.6	18	5.0	3.1	10	7.5	.41	.09	.04
16	.67	1.5	1.1	1.8	16	6.5	4.7	6.8	19	0	.04	.03
17	2.9	1.4	1.1	2.0	14	7.5	4.7	7.8	25	0	.04	.03
18	2.9	2.2	1.2	2.1	12	8.5	3.7	6.1	12	0	.04	.03
19	1.9	2.2	1.5	2.3	11	11	3.7	4.4	13	0	.04	.03
20	1.8	2.0	1.6	2.4	11	9.4	2.9	4.2	8.8	0	.04	.03
21	2.9	1.8	1.4	2.4	11	6.8	1.2	3.7	5.8	0	.04	.03
22	4.0	1.6	1.4	2.4	11	5.8	2.2	3.5	4.2	0	.07	.04
23	3.7	1.5	1.3	2.5	12	4.7	3.3	2.9	4.0	.01	.05	.04
24	11	1.4	1.2	2.4	16	4.4	2.9	2.6	4.7	1.1	.07	.04
25	11	1.2	1.1	2.4	14	4.4	2.6	2.1	4.7	.71	.07	.04
26	4.7	1.2	1.1	2.3	11	4.0	3.0	1.9	3.5	.01	.07	.04
27	3.3	1.1	1.1	2.1	10	4.2	4.2	1.8	2.4	.01	.09	.03
28	2.6	1.0	1.3	3.0	12	4.0	4.7	1.9	2.2	0	.09	.03
29	2.4	.80	1.7	4.5	11	3.5	17	2.1	2.1	.01	.07	.03
30	2.2	.60	2.0	6.0	---	3.5	11	2.4	1.5	0	.05	.03
31	1.9	---	1.7	9.0	---	3.3	---	1.5	---	.01	.07	---
TOTAL	67.61	43.80	39.80	68.90	401	184.5	115.9	154.9	143.21	9.87	3.09	1.35
MEAN	2.18	1.46	1.28	2.22	13.8	5.95	3.86	5.00	4.77	.32	.10	.045
MAX	11	2.2	2.0	9.0	21	14	17	15	25	1.8	.79	.11
MIN	.13	.60	.40	.80	10	2.5	1.2	1.5	.85	0	0	.03
AC-FT	134	87	79	137	795	366	230	307	284	20	6.1	2.7

CAL YR 1975 TOTAL 6185.51 MEAN 16.9 MAX 460 MIN .04 AC-FT 12270
WTR YR 1976 TOTAL 1233.93 MEAN 3.37 MAX 25 MIN 0 AC-FT 2450

06294995 ARMELLS CREEK NEAR FORSYTH, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
14...	1600	2.2	4240	--	8.0	7.0	50	10.4	95	2.5	470	0
NOV												
05...	0800	2.2	3390	8.3	3.5	5.5	25	10.8	93	2.0	710	300
DEC												
02...	1000	.86	4700	8.3	-4.0	.5	10	11.0	83	.3	1200	540
JAN												
06...	1000	1.5	5700	8.1	-20.0	.0	7	11.0	83	.7	1300	700
FEB												
02...	1400	21	3290	7.9	8.0	.5	45	12.4	93	3.8	980	630
MAR												
01...	1530	7.8	3530	8.3	-5.5	.0	15	13.0	98	.0	1100	670
APR												
05...	1345	3.9	4750	8.3	22.0	13.5	20	10.7	111	.4	1400	960
MAY												
03...	1600	3.2	3620	8.4	23.0	17.0	15	11.2	127	3.0	970	590
JUN												
01...	1030	2.1	4800	8.2	19.0	21.5	10	8.8	110	.2	1300	900
JUL												
06...	1010	.23	4200	8.4	29.0	24.5	6	10.5	138	1.0	1000	630
AUG												
04...	0905	.04	3120	8.4	22.0	21.0	10	8.5	105	2.4	600	170
SEP												
09...	0805	.05	2920	8.3	10.0	9.5	8	10.1	96	1.9	460	2

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
OCT											
14...	46	86	880	18	8.0	664	--	1800	22	.5	1.3
NOV											
05...	120	100	550	9.0	12	501	0	1500	24	.4	5.3
DEC											
02...	170	180	920	12	12	762	0	2400	34	.4	7.6
JAN											
06...	210	190	860	10	12	737	0	2400	39	.4	9.4
FEB											
02...	160	140	430	6.0	11	423	0	1600	25	.3	8.3
MAR											
01...	160	160	490	6.6	9.3	476	0	1700	22	.3	5.4
APR											
05...	190	230	840	9.7	11	567	0	2400	260	.4	2.2
MAY											
03...	140	150	590	8.3	11	444	8	1800	23	.4	3.5
JUN											
01...	110	250	840	10	11	494	0	2700	29	.4	1.3
JUL											
06...	120	180	710	9.6	12	463	18	2000	28	.4	4.2
AUG											
04...	97	88	580	10	10	533	0	1300	20	.4	7.2
SEP											
09...	66	71	580	12	9.6	555	0	1300	19	.5	8.8

06294995 ARMELLS CREEK NEAR FORSYTH, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT											
14...	3170	4.31	18.8	.07	.12	1.1	1.2	1.3	.14	540	20
NOV											
05...	2560	3.48	15.2	.04	.16	1.4	1.6	1.6	.09	320	50
DEC											
02...	4100	5.58	9.52	.09	.08	.68	.76	.85	.01	540	20
JAN											
06...	4080	5.55	16.5	.20	.11	1.8	1.9	2.1	.08	510	20
FEB											
02...	2580	3.51	148	.08	.01	1.4	1.4	1.5	.10	330	40
MAR											
01...	2780	3.78	58.5	.02	.04	.72	.76	.78	.02	350	20
APR											
05...	4210	5.73	44.3	.07	.04	1.1	1.1	1.2	.03	480	10
MAY											
03...	2950	4.01	25.5	.01	.01	.89	.90	.91	.08	410	20
JUN											
01...	4190	5.70	23.8	.02	.04	.59	.63	.65	.08	500	40
JUL											
06...	3300	4.49	2.05	.00	.00	.60	.60	.60	.03	600	0
AUG											
04...	2370	3.22	.26	.01	.00	.68	.68	.69	.06	440	20
SEP											
09...	2330	3.17	.31	.12	.01	.51	.52	.64	.06	410	110

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BISMUTH (BI) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)
OCT											
14...	1600	2200	--	2	--	--	10	--	--	20	--
NOV											
05...	0800	920	10	1	1	100	0	0	<30	10	0
JAN											
06...	1000	260	--	1	--	--	10	--	--	10	--
APR											
05...	1345	570	--	0	--	--	20	--	--	10	--
JUL											
06...	1010	210	--	1	--	--	0	--	--	10	--

DATE	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED GALLIUM (GA) (UG/L)	DIS-SOLVED GER-MANIUM (GE) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)
OCT										
14...	10	--	--	20	--	--	--	2700	<100	--
NOV										
05...	64	10	<20	30	1	<20	<30	1400	<100	3
JAN										
06...	0	--	--	10	--	--	--	250	<100	--
APR										
05...	20	--	--	10	--	--	--	750	<100	--
JUL										
06...	10	--	--	10	--	--	--	280	<100	--

DATE	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)
OCT										
14...	30	--	210	--	.1	--	4	--	100	--
NOV										
05...	50	30	110	60	.1	.0	2	2	100	6
JAN										
06...	60	--	80	--	.6	--	3	--	<50	--
APR										
05...	60	--	190	--	.0	--	1	--	<50	--
JUL										
06...	60	--	150	--	.0	--	0	--	50	--

06294995 ARMELLS CREEK NEAR FORSYTH, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED STRON-TIUM (SR) (UG/L)	DIS-SOLVED TIN (SN) (UG/L)	DIS-SOLVED TI-TANIUM (TI) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	DIS-SOLVED ZIR-CONIUM (ZR) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
14...	0	--	--	--	--	--	--	--	20	--
NOV										
05...	0	0	<2	1500	<20	<20	2.3	<30	40	20
JAN										
06...	0	--	--	--	--	--	--	--	10	--
APR										
05...	0	--	--	--	--	--	--	--	10	--
JUL										
06...	1	--	--	--	--	--	--	--	10	--

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	DIS-SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS-PENDED GROSS ALPHA AS U-NAT. (UG/L)	DIS-SOLVED GROSS BETA AS CS-137 (PC/L)	SUS-PENDED GROSS BETA AS CS-137 (PC/L)	DIS-SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS-PENDED GROSS BETA AS SR90 /Y90 (PC/L)	DIS-SOLVED RA-226 (RADON METHOD) (PC/L)	DIS-SOLVED URANIUM (DIRECT FLUORO-METRIC) (PC/L)	TOTAL FILT-RABLE RESIDUE (MG/L)	TOTAL NON-FILT-RABLE RESIDUE (MG/L)
NOV											
05...	0800	<41	1.2	82	2.6	65	2.2	.12	12	9	28

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
OCT					
14...	1600	7.0	2.2	167	.99
NOV					
05...	0800	5.5	2.2	179	1.1
DEC					
02...	1000	.5	.86	38	.09
JAN					
06...	1000	.0	1.5	65	.26
FEB					
02...	1400	.5	21	161	9.1
MAR					
01...	1530	.0	7.8	102	2.1
APR					
05...	1345	13.5	3.9	104	1.1
MAY					
03...	1600	17.0	3.2	45	.39
JUN					
01...	1030	21.5	2.1	32	.18
JUL					
06...	1010	24.5	.23	13	.01
AUG					
04...	0905	21.0	.04	49	.01
SEP					
09...	0805	9.5	.05	112	.02

06295000 YELLOWSTONE RIVER AT FORSYTH, MT

LOCATION.--Lat 46°15'53", long 106°41'43", in SE¼NE¼NE¼ sec.22, T.6 N., R.40 E., Rosebud County, Hydrologic Unit 10100001, at site of former gaging station, at bridge on State Highway 12, 0.7 mi (1.1 km) northwest of Forsyth, and 1.4 mi (2.3 km) downstream from Smith Creek.

DRAINAGE AREA.--40,339 mi² (104,478 km²).

PERIOD OF RECORD.--Water years 1975 to current year.

REMARKS.--The water discharge is measured or computed by adding the discharge of Yellowstone River at Billings (station 06214500) to that of Bighorn River at Bighorn (station 06294700). Flow affected by reservoirs and diversions for irrigation upstream from station.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)
OCT										
21...	0940	9000	540	8.5	4.5	10.5	9	11.0	108	.8
NOV										
18...	0900	9270	640	8.4	.5	4.5	4	11.2	95	.4
DEC										
16...	1000	8530	755	8.5	-15.0	.0	10	13.1	98	.8
JAN										
31...	1200	8360	675	8.4	9.5	1.5	35	12.4	96	1.7
FEB										
26...	1545	7940	730	8.0	11.5	4.0	25	12.2	102	.7
MAR										
16...	0850	8480	800	8.3	5.5	2.5	15	12.2	98	.5
MAY										
10...	1300	20500	540	8.0	27.0	14.5	70	9.0	97	1.6
17...	1530	30900	365	8.2	28.0	16.0	140	9.0	100	1.6
JUN										
15...	0900	42600	300	7.7	15.5	12.0	70	9.8	100	1.8
JUL										
20...	1415	18900	300	8.1	27.5	22.0	10	8.2	101	1.0
AUG										
17...	0845	9830	470	8.3	20.0	20.0	15	8.0	96	1.5
SEP										
21...	0830	8150	520	8.2	8.0	15.0	10	8.6	96	1.1

DATE	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)
OCT										
21...	220	72	55	21	51	1.5	3.2	185	0	152
NOV										
18...	230	74	59	19	52	1.5	3.3	185	0	152
DEC										
16...	250	86	64	22	60	1.7	3.3	200	0	164
JAN										
31...	230	75	59	20	59	1.7	3.4	189	0	155
FEB										
26...	250	95	64	23	61	1.7	3.3	195	0	160
MAR										
16...	260	95	66	24	69	1.9	3.8	205	0	168
MAY										
10...	200	47	47	19	42	1.3	3.0	181	0	148
17...	130	26	34	12	28	1.1	2.3	132	0	108
JUN										
15...	100	25	26	9.4	22	.9	1.8	96	0	79
JUL										
20...	110	19	28	9.6	23	1.0	2.2	110	0	90
AUG										
17...	170	46	44	14	37	1.2	2.8	148	0	121
SEP										
21...	190	50	45	18	43	1.4	2.9	167	0	137

06295000 YELLOWSTONE RIVER AT FORSYTH, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)
OCT									
21...	170	9.0	.4	9.8	411	.56	9990	.16	.07
NOV									
18...	180	8.3	.4	9.8	423	.58	10600	2.1	.02
DEC									
16...	190	8.5	.4	12	459	.62	10600	.41	.05
JAN									
31...	190	8.9	.5	10	444	.60	10000	.42	.08
FEB									
26...	210	10	.4	9.9	478	.65	10200	.38	.07
MAR									
16...	230	10	.5	11	515	.70	11800	.38	.08
MAY									
10...	120	6.5	.3	11	338	.46	18700	.42	.02
17...	86	4.9	.2	12	245	.33	20400	.24	.12
JUN									
15...	67	4.1	.2	12	190	.26	21900	.18	.04
JUL									
20...	68	5.3	.4	10	201	.27	10300	.08	.00
AUG									
17...	110	6.7	.4	10	298	.41	7910	.14	.00
SEP									
21...	130	6.9	.4	9.3	338	.46	7440	.21	.03

DATE	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	DIS-SOL-VED ORGANIC CARBON (C) (MG/L)	SUS-PENDED ORGANIC CARBON (C) (MG/L)
OCT									
21...	.27	.34	.50	.06	150	0	4.7	3.0	.6
NOV									
18...	.31	.33	2.4	.00	150	70	--	--	--
DEC									
16...	.44	.49	.90	.02	140	50	--	--	--
JAN									
31...	.68	.76	1.2	.10	100	20	4.7	--	--
FEB									
26...	.38	.43	.81	.09	140	10	6.4	3.6	1.1
MAR									
16...	.51	.59	.97	.07	0	0	--	--	--
MAY									
10...	.16	.18	.60	.26	70	20	--	7.6	2.9
17...	1.2	1.3	1.5	.50	50	60	--	--	--
JUN									
15...	.39	.43	.61	.27	100	20	--	--	--
JUL									
20...	.16	.16	.24	.01	100	0	10	5.7	3.6
AUG									
17...	.00	.00	.14	.07	110	0	--	--	--
SEP									
21...	.47	.50	.71	.05	140	10	--	--	--

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)
OCT											
21...	0940	510	20	6	4	10	10	0	0	90	0
JAN											
31...	1200	260	10	8	4	10	0	<10	0	10	0
MAY											
10...	1300	2000	20	12	7	0	0	<10	1	10	0
JUL											
20...	1415	1800	20	6	6	0	0	<10	<10	0	0

06295000 YELLOWSTONE RIVER AT FORSYTH, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)
OCT										
21...	50	1	580	<100	3	30	30	40	10	.0
JAN										
31...	20	1	3000	<100	1	50	40	100	10	.2
MAY										
10...	30	2	6500	<100	4	30	20	230	0	.0
JUL										
20...	30	2	2200	30	2	30	30	0	0	.0

DATE	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
21...	.0	4	2	50	5	1	1	1.5	10	10
JAN										
31...	.2	2	1	<50	2	2	2	1.6	20	0
MAY										
10...	.0	2	2	<50	4	1	1	.0	20	0
JUL										
20...	.0	1	1	<50	2	1	1	.1	10	10

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .062 MM
OCT						
21...	0940	10.5	9000	39	948	--
NOV						
18...	0900	4.5	9270	17	425	--
DEC						
16...	1000	.0	8530	76	1750	--
JAN						
31...	1200	1.5	8360	242	5460	--
FEB						
26...	1545	4.0	7940	89	1910	--
MAR						
16...	0850	2.5	8480	59	1350	--
MAY						
10...	1300	14.5	20500	404	22400	--
17...	1530	16.0	30900	736	61400	--
JUN						
15...	0900	12.0	42600	387	44500	--
JUL						
20...	1415	22.0	18900	154	7860	55
AUG						
17...	0845	20.0	9830	55	1460	76
SEP						
21...	0830	15.0	8150	47	1030	70

06295250 ROSEBUD CREEK NEAR COLSTRIP, MT

LOCATION.--Lat 45°46'03", long 106°34'10", in SE¼SW¼NE¼ sec.8, T.1 S., R.42 E., Rosebud County, Hydrologic Unit 10100003, on left bank 10 ft (3 m) downstream from bridge on FAS Route 315, 1.5 mi (2.4 km) downstream from Lee Coulee, and 8.4 mi (13.5 km) southeast of Colstrip.

DRAINAGE AREA.--799 mi^2 (2,069 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,000 ft (914 m), from topographic map.

REMARKS.--Water-discharge records good except those for winter period and April, which are poor. Diversions for irrigation of about 800 acres (3.24 km^2) above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 406 ft^3/s (11.5 m^3/s) May 17, 1975, gage height, 6.92 ft (2.109 m); maximum gage height, 7.76 ft (2.365 m) Mar. 4, 1975 (backwater from ice); minimum daily discharge, 12 ft^3/s (0.34 m^3/s) Dec. 24, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 118 ft^3/s (3.34 m^3/s) May 7, gage height, 2.84 ft (0.866 m); maximum gage height, 3.28 ft (1.000 m) Mar. 22 (backwater from ice); minimum discharge, 13 ft^3/s (0.37 m^3/s) Aug. 30, gage height, 1.27 ft (0.387 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	43	36	40	65	62	70	85	57	68	31	16
2	33	43	40	40	70	60	70	85	55	65	31	17
3	32	43	42	40	70	56	70	90	54	63	31	17
4	31	43	44	38	68	52	70	95	55	68	28	17
5	31	43	45	36	64	50	70	97	57	64	27	17
6	31	44	45	34	56	48	68	108	57	69	27	17
7	30	43	45	32	54	55	67	101	58	62	26	17
8	30	44	45	30	52	60	67	104	59	58	26	17
9	31	45	45	26	50	65	65	108	56	56	25	17
10	32	42	45	24	48	70	65	104	55	54	24	16
11	33	43	45	26	48	75	65	100	55	52	23	17
12	33	38	45	30	52	70	65	99	56	50	22	17
13	33	38	43	30	56	60	70	89	54	50	22	17
14	34	39	40	30	60	65	70	89	55	49	21	17
15	38	41	38	30	64	70	70	88	58	47	21	18
16	40	43	36	32	70	65	70	88	62	45	21	18
17	40	45	36	34	72	65	70	85	64	44	20	18
18	43	47	36	36	72	65	70	83	70	43	20	17
19	44	45	36	38	74	65	75	80	94	42	21	17
20	44	43	38	40	72	70	75	76	92	40	21	17
21	44	39	40	40	70	75	75	73	92	38	19	17
22	44	36	40	40	68	80	75	70	87	40	18	17
23	46	34	40	40	66	75	75	67	87	38	17	17
24	47	34	40	40	64	70	80	66	93	37	16	17
25	47	34	40	40	64	70	80	66	90	36	16	16
26	47	32	40	38	64	70	90	64	99	34	16	16
27	47	32	40	36	64	70	100	59	90	34	15	15
28	45	32	40	34	62	70	95	56	82	32	15	16
29	44	32	40	38	62	70	90	57	78	31	15	16
30	44	34	40	50	---	70	85	59	73	31	14	17
31	44	---	40	60	---	70	---	55	---	30	14	---
TOTAL	1198	1194	1265	1122	1821	2038	2227	2546	2113	1490	663	505
MEAN	38.6	39.8	40.8	36.2	62.8	65.7	74.2	82.1	70.4	48.1	21.4	16.8
MAX	47	47	45	60	74	80	100	108	99	84	31	18
MIN	30	32	36	24	48	48	65	55	54	30	14	15
AC-FT	2380	2370	2510	2230	3610	4040	4420	5050	4190	2960	1320	1000

CAL YR 1975 TOTAL 36877 MEAN 101 MAX 405 MIN 20 AC-FT 73150
WTR YR 1976 TOTAL 18182 MEAN 49.7 MAX 108 MIN 14 AC-FT 36060

06295250 ROSEBUD CREEK NEAR COLSTRIP, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
15...	1430	39	1060	8.5	5.5	7.5	7	11.2	105	1.0	570	150
NOV												
06...	1330	44	1120	8.3	17.5	4.5	9	11.4	98	--	530	130
DEC												
02...	1000	40	1290	8.4	6.0	.5	10	11.6	89	.4	600	130
JAN												
07...	1100	32	1370	7.9	-17.5	.0	10	10.8	82	.7	620	160
FEB												
03...	1530	70	1270	8.3	-7.0	.0	15	12.4	95	.8	570	140
MAR												
02...	1330	60	1150	8.1	-10.5	.0	15	--	--	1.6	550	130
APR												
08...	1200	67	1230	8.4	17.5	11.5	50	10.1	103	2.0	590	190
MAY												
05...	1030	95	1060	8.4	11.5	11.5	45	9.0	92	1.5	500	120
JUN												
03...	1015	54	1100	8.1	19.0	19.5	100	8.0	98	2.3	510	130
JUL												
08...	0930	58	900	8.4	23.5	21.0	170	6.6	83	2.9	480	120
AUG												
03...	1423	30	1260	8.4	30.0	22.5	35	8.0	103	1.8	520	160
SEP												
09...	1250	17	1200	8.5	23.0	14.5	10	10.1	110	.7	510	220

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
OCT											
15...	80	90	62	1.1	11	504	7	250	5.7	.7	16
NOV											
06...	72	86	63	1.2	9.5	497	0	260	5.3	.6	14
DEC											
02...	86	93	72	1.3	9.9	571	0	290	5.3	.6	18
JAN											
07...	89	96	73	1.3	9.5	558	0	320	6.5	.5	17
FEB											
03...	87	85	67	1.2	10	525	0	300	4.4	.6	17
MAR											
02...	80	84	63	1.2	8.7	512	0	230	4.8	.6	14
APR											
08...	83	94	74	1.3	6.8	488	0	340	4.7	.6	11
MAY											
05...	75	76	53	1.0	8.2	459	0	260	4.6	.5	11
JUN											
03...	66	85	59	1.1	8.3	468	0	260	3.4	.5	15
JUL											
08...	67	76	50	1.0	8.3	423	8	220	4.0	.5	16
AUG											
03...	67	85	69	1.3	10	424	8	290	5.1	.6	14
SEP											
09...	53	92	80	1.5	11	281	34	380	6.4	.6	14

06295250 ROSEBUD CREEK NEAR COLSTRIP, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT											
15...	771	1.05	81.2	.02	.00	.59	.59	.61	.05	180	110
NOV											
06...	756	1.03	89.8	.01	.02	.40	.42	.43	.04	150	0
DEC											
02...	857	1.17	92.6	.16	.01	.39	.40	.56	.00	220	40
JAN											
07...	887	1.21	76.6	.28	.11	.11	.22	.50	.07	150	10
FEB											
03...	830	1.13	157	.35	.03	.64	.67	1.0	.06	140	70
MAR											
02...	738	1.00	120	.15	.02	1.2	1.2	1.4	.03	140	20
APR											
08...	857	1.17	155	.00	.03	.73	.76	.76	.10	110	30
MAY											
05...	715	.97	183	.12	.02	.87	.89	1.0	.10	130	0
JUN											
03...	728	.99	106	.11	.05	.95	1.0	1.1	.18	160	10
JUL											
08...	659	.90	104	.42	.01	.80	.81	1.2	.07	150	60
AUG											
03...	758	1.03	61.4	.01	.00	.68	.68	.69	.07	190	20
SEP											
09...	810	1.10	37.2	.00	.00	.71	.71	.71	.08	210	30

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BISMUTH (BI) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)
OCT											
15...	1430	310	--	2	--	--	10	--	--	10	--
NOV											
06...	1330	200	10	1	1	80	0	0	<10	0	0
JAN											
07...	1100	390	--	0	--	--	10	--	--	10	--
APR											
08...	1200	1000	--	2	--	--	0	--	--	<10	--
JUL											
08...	0930	8800	--	9	--	--	0	--	--	<10	--

DATE	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED GALLIUM (GA) (UG/L)	DIS-SOLVED GER-MANIUM (GE) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)
OCT										
15...	0	--	--	10	--	--	--	500	<100	--
NOV										
06...	10	2	<10	0	0	<5	<10	310	<100	0
JAN										
07...	0	--	--	<10	--	--	--	660	<100	--
APR										
08...	10	--	--	10	--	--	--	2300	<100	--
JUL										
08...	20	--	--	20	--	--	--	16000	<100	--

06295250 ROSEBUD CREEK NEAR COLSTRIP, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)
OCT										
15...	50	--	20	--	.1	--	2	--	50	--
NOV										
06...	50	50	40	10	.0	.0	5	3	<50	1
JAN										
07...	50	--	60	--	.0	--	3	--	<50	--
APR										
08...	50	--	110	--	.0	--	2	--	<50	--
JUL										
08...	60	--	600	--	.0	--	2	--	<50	--

DATE	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED STRON-TIUM (SR) (UG/L)	DIS-SOLVED TIN (SN) (UG/L)	DIS-SOLVED TI-TANIUM (TI) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	DIS-SOLVED ZIR-CONIUM (ZR) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
15...	0	--	--	--	--	--	--	--	10	--
NOV										
06...	0	0	<1	1100	<10	<10	2.9	<10	20	0
JAN										
07...	1	--	--	--	--	--	--	--	20	--
APR										
08...	0	--	--	--	--	--	--	--	10	--
JUL										
08...	1	--	--	--	--	--	--	--	80	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
OCT					
15...	1430	7.5	39	19	2.0
NOV					
06...	1330	4.5	44	33	3.9
DEC					
02...	1000	.5	40	22	2.4
JAN					
07...	1100	.0	32	70	6.0
FEB					
03...	1530	.0	70	57	10
MAR					
02...	1330	.0	60	33	5.3
APR					
08...	1200	11.5	67	145	26
MAY					
05...	1030	11.5	95	167	42
JUN					
03...	1015	19.5	54	254	37
JUL					
08...	0930	21.0	58	503	79
AUG					
03...	1423	22.5	30	156	13
SEP					
09...	1250	14.5	17	64	2.9

06295350 GREENLEAF CREEK NEAR COLSTRIP, MT

LOCATION.--Lat 45°48'57", long 106°25'08", in NW¼NW¼NW¼ sec.29, T.1 N., R.43 E., Rosebud County, Hydrologic Unit 10100003, on county road, 0.8 mi (1.3 km) upstream from mouth, and 11.0 mi (17.7 km) southeast of Colstrip.

DRAINAGE AREA.--30.5 mi^2 (79.0 km^2).

PERIOD OF RECORD.--Water years 1975 to September 1976 (discontinued).

REMARKS.--Flow was not present during station visits.

06295400 ROSEBUD CREEK ABOVE PONY CREEK, NEAR COLSTRIP, MT

LOCATION.--Lat 45°53'33", long 106°24'03", in NE¼SE¼SE¼ sec.29, T.2 N., R.43 E., Rosebud County, Hydrologic Unit 10100003, on private road bridge, 0.3 mi (0.5 km) upstream from Pony Creek, and 11.6 mi (18.7 km) northeast of Colstrip.

DRAINAGE AREA.--1,153 mi^2 (2,986 km^2).

PERIOD OF RECORD.--Water years 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
16...	1530	38	1380	8.4	15.0	8.0	20	10.6	99	1.2	570	140
NOV												
18...	1500	43	1300	8.4	1.0	1.5	15	12.2	97	.6	600	170
DEC												
03...	1000	49	1700	8.4	10.5	.5	15	11.2	85	.2	630	170
JAN												
07...	1445	28	1480	7.5	-17.0	.0	10	11.2	85	.5	610	160
FEB												
04...	1300	43	1590	8.1	-13.0	.0	15	11.0	83	.2	680	220
MAR												
03...	1330	54	1240	8.2	-6.5	.0	15	--	--	.6	570	150
APR												
08...	1000	65	1360	8.3	15.0	11.0	40	10.0	101	.8	620	220
MAY												
05...	1330	88	1160	8.3	13.5	11.5	80	9.0	91	2.4	570	190
JUN												
03...	1330	55	1160	8.2	25.5	20.5	90	9.7	118	2.6	520	140
JUL												
07...	1115	61	970	8.2	29.5	22.0	170	6.8	86	2.0	470	150
AUG												
03...	1105	25	1210	8.3	27.5	20.5	80	7.6	94	2.6	540	180
SEP												
08...	1325	9.4	1360	8.7	16.0	15.5	20	9.6	107	1.1	630	240

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
OCT											
16...	79	90	69	1.3	11	491	13	290	4.5	.6	16
NOV											
18...	82	95	82	1.5	10	495	14	350	5.7	.6	15
DEC											
03...	89	99	94	1.6	10	563	0	370	5.2	.6	17
JAN											
07...	89	94	80	1.4	9.5	551	0	340	7.4	.6	18
FEB											
04...	91	110	95	1.6	10	560	0	430	5.1	.6	17
MAR											
03...	78	91	69	1.3	9.1	514	0	290	4.3	.7	15
APR											
08...	83	100	86	1.5	8.9	483	0	380	4.6	.5	11
MAY											
05...	80	89	70	1.3	8.8	461	0	330	13	.5	11
JUN											
03...	65	88	69	1.3	8.1	468	0	320	4.1	.6	15
JUL											
07...	60	78	47	.9	7.8	392	0	220	4.0	.6	16
AUG											
03...	66	92	86	1.6	10	439	0	350	5.7	.6	14
SEP											
08...	70	110	100	1.7	12	438	15	430	6.6	.6	10

06295400 ROSEBUD CREEK ABOVE PONY CREEK, NEAR COLSTRIP, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT											
16...	815	1.11	83.6	.00	.03	.63	.66	.66	.04	180	0
NOV											
18...	899	1.22	104	.02	.01	.72	.73	.75	.02	210	0
DEC											
03...	963	1.31	127	.08	.01	.48	.49	.57	.00	210	20
JAN											
07...	910	1.24	68.8	.26	.09	.29	.38	.64	.05	150	70
FEB											
04...	1040	1.41	121	.37	.02	.65	.67	1.0	.05	180	20
MAR											
03...	811	1.10	119	.23	.04	.47	.51	.74	.06	140	20
APR											
08...	912	1.24	160	.00	.02	3.8	3.8	3.8	.08	140	20
MAY											
05...	830	1.13	197	.15	.03	1.1	1.1	1.3	.17	160	10
JUN											
03...	801	1.09	120	.08	.05	1.2	1.2	1.3	.22	180	10
JUL											
07...	627	.85	103	.35	.00	.89	.89	1.2	.04	180	60
AUG											
03...	841	1.14	57.2	.00	.00	.54	.54	.54	.15	210	10
SEP											
08...	971	1.32	24.7	.01	.01	.33	.34	.35	.06	240	140

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)
OCT											
16...	1530	570	--	1	--	10	--	20	--	20	--
NOV											
18...	1500	400	10	3	3	0	0	10	0	20	0
JAN											
07...	1445	430	--	0	--	10	--	0	--	0	--
APR											
08...	1000	1000	--	1	--	0	--	10	--	10	--
JUL											
07...	1115	4600	--	18	--	0	--	<10	--	20	--

DATE	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)
OCT										
16...	50	--	890	<100	--	50	--	50	--	.1
NOV										
18...	10	3	820	<100	2	60	50	40	20	.0
JAN										
07...	<10	--	740	<100	--	40	--	50	--	.0
APR										
08...	10	--	1900	<100	--	50	--	140	--	.0
JUL										
07...	20	--	8200	<100	--	80	--	310	--	.0

06295400 ROSEBUD CREEK ABOVE PONY CREEK, NEAR COLSTRIP, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
16...	--	2	--	0	--	0	--	--	40	--
NOV										
18...	.0	4	3	<50	1	1	1	1.7	40	30
JAN										
07...	--	3	--	<50	--	1	--	--	30	--
APR										
08...	--	2	--	<50	--	0	--	--	10	--
JUL										
07...	--	2	--	<50	--	1	--	--	40	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
OCT					
16...	1530	8.0	38	45	4.6
NOV					
18...	1500	1.5	43	69	8.0
DEC					
03...	1000	.5	49	33	4.4
JAN					
07...	1445	.0	28	62	4.7
FEB					
04...	1300	.0	43	47	5.5
MAR					
03...	1330	.0	54	80	12
APR					
08...	1000	11.0	65	143	25
MAY					
05...	1330	11.5	88	289	69
JUN					
03...	1330	20.5	55	333	49
JUL					
07...	1115	22.0	61	589	97
AUG					
03...	1105	20.5	25	206	14
SEP					
08...	1325	15.5	9.4	94	2.4

06295500 ROSEBUD CREEK NEAR ROSEBUD, MT

LOCATION.--Lat 46°06'46", long 106°27'08", in SW¼NE¼SW¼ sec.12, T.4 N., R.42 N., Rosebud County, Hydrologic Unit 10100003, on private road bridge, 1.0 mi (1.6 km) downstream from Cottonwood Creek, and 12 mi (19 km) south of Rosebud.

DRAINAGE AREA.--1,215 mi² (3,147 km²).

PERIOD OF RECORD.--Water years 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
17...	1100	38	1220	8.4	4.0	6.0	50	11.4	101	1.2	570	160
NOV												
17...	1430	43	1330	8.4	4.5	1.5	25	12.2	95	.2	590	170
DEC												
03...	1400	43	1540	8.3	6.5	.5	15	12.1	92	.5	630	170
JAN												
08...	1200	33	1500	7.8	-17.0	.0	20	11.2	85	1.5	640	290
FEB												
05...	1130	42	1500	8.1	6.0	.0	90	12.6	95	1.2	600	190
MAR												
23...	1300	75	1150	8.1	10.0	2.0	75	12.0	96	1.7	510	150
APR												
06...	1400	63	1340	8.3	23.0	9.5	50	10.6	103	1.1	630	240
MAY												
04...	1400	79	1280	8.4	19.0	11.5	140	9.3	94	1.0	590	200
JUN												
02...	1300	48	1270	8.2	32.0	20.5	180	7.8	95	2.6	570	170
JUL												
07...	0815	58	1080	8.2	24.5	21.5	270	7.0	88	1.9	490	140
AUG												
03...	0805	18	1250	8.3	24.0	20.5	50	7.3	89	2.2	560	200
SEP												
08...	0955	10	1590	8.6	13.0	14.0	15	8.1	85	.9	680	290

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
OCT											
17...	78	91	78	1.4	10	489	8	320	5.7	.6	15
NOV											
17...	80	95	86	1.5	10	487	11	380	5.7	.6	14
DEC											
03...	89	100	110	1.9	10	569	0	410	5.8	.6	16
JAN											
08...	92	100	88	1.5	9.5	427	0	440	7.4	.5	17
FEB											
05...	84	94	99	1.8	9.7	502	0	420	5.2	.5	15
MAR											
23...	72	81	73	1.4	8.3	445	0	280	3.9	.5	11
APR											
06...	87	100	94	1.6	8.6	473	0	400	5.0	.5	11
MAY											
04...	76	98	86	1.5	8.8	448	15	370	4.9	.6	11
JUN											
02...	70	95	92	1.7	8.4	484	0	360	5.4	.5	15
JUL											
07...	61	82	68	1.3	8.3	428	0	300	4.2	.5	16
AUG											
03...	65	97	100	1.8	11	440	0	380	6.2	.6	14
SEP											
08...	74	120	130	2.2	12	431	21	600	7.5	.6	8.7

06295500 ROSEBUD CREEK NEAR ROSEBUD, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT											
17...	848	1.15	87.0	.01	.06	.91	.97	.98	.02	200	0
NOV											
17...	923	1.26	107	.01	.02	.73	.75	.76	.04	190	20
DEC											
03...	1020	1.39	118	.04	.00	.61	.61	.65	.02	220	30
JAN											
08...	965	1.31	87.0	.29	.09	.30	.39	.68	.06	150	20
FEB											
05...	975	1.33	111	.31	.01	.95	.96	1.3	.10	160	20
MAR											
23...	749	1.02	152	.07	.02	.94	.96	1.0	.01	90	0
APR											
06...	939	1.28	160	.00	.04	.74	.78	.78	.08	160	0
MAY											
04...	891	1.21	190	.01	.01	.88	.89	.90	.23	170	40
JUN											
02...	885	1.20	115	.29	.01	1.3	1.3	1.6	.26	200	20
JUL											
07...	751	1.02	118	.37	.00	1.3	1.3	1.7	.03	170	20
AUG											
03...	891	1.21	43.3	.02	.00	.57	.57	.59	.03	220	40
SEP											
08...	1190	1.62	32.1	.00	.01	.53	.54	.54	.05	260	160

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)
OCT										
17...	1100	1500	--	1	--	10	--	0	--	30
NOV										
17...	1430	700	10	2	2	0	0	0	0	35
JAN										
08...	1200	770	--	0	--	0	--	0	--	0
APR										
06...	1400	1600	--	1	--	10	--	<10	--	20
JUL										
07...	0815	6400	--	8	--	0	--	<10	--	20

DATE	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)
OCT										
17...	--	30	--	2200	<100	--	40	--	70	--
NOV										
17...	0	10	1	1300	<100	3	60	50	50	30
JAN										
08...	--	10	--	1000	<100	--	50	--	50	--
APR										
06...	--	<10	--	2600	<100	--	50	--	110	--
JUL										
07...	--	30	--	11000	<100	--	60	--	420	--

DATE	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
17...	.1	--	2	--	0	--	0	--	30	--
NOV										
17...	.0	.0	3	3	<50	1	0	1.6	20	10
JAN										
08...	.0	--	2	--	<50	--	1	--	30	--
APR										
06...	.0	--	2	--	<50	--	0	--	20	--
JUL										
07...	.0	--	2	--	<50	--	1	--	50	--

06295500 ROSEBUD CREEK NEAR ROSEBUD, MT--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
OCT					
17...	1100	6.0	38	247	25
NOV					
17...	1430	1.5	43	134	16
DEC					
03...	1400	.5	43	80	9.3
JAN					
08...	1200	.0	33	118	11
FEB					
05...	1130	.0	42	193	22
MAR					
23...	1300	2.0	75	397	80
APR					
06...	1400	9.5	63	210	36
MAY					
04...	1400	11.5	79	443	94
JUN					
02...	1300	20.5	48	396	51
JUL					
07...	0815	21.5	58	580	91
AUG					
03...	0805	20.5	18	146	7.1
SEP					
08...	0955	14.0	10	395	11

06296003 ROSEBUD CREEK AT MOUTH, NEAR ROSEBUD, MT

LOCATION.--Lat 46°15'53", long 106°28'30", in SW¼NW¼NE¼ sec.21, T.6 N., R.42 E., Rosebud County, Hydrologic Unit 10100003, on left bank 0.4 mi (0.6 km) upstream from bridge on Interstate Highway I-94, 0.8 mi (1.3 km) upstream from mouth, and 1.6 mi (2.6 km) southwest of Rosebud.

DRAINAGE AREA.--1,302 mi^2 (3,372 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,480 ft (756 m), from topographic map.

REMARKS.--Water-discharge records good except those for winter period, which are poor. Diversions for irrigation of about 2,000 acres (8.09 km^2).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 1,200 ft^3/s (34.0 m^3/s) Feb. 26, 1975, gage height, 5.78 ft (1.762 m), backwater from ice: minimum discharge, 1.7 ft^3/s (0.048 m^3/s) Aug. 12, 1976, gage height, 0.85 ft (0.259 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 206 ft^3/s (5.83 m^3/s) June 15, gage height, 2.60 ft (0.792 m); maximum gage height, 3.21 ft (0.978 m) Jan. 31 (backwater from ice); no peaks above base of 350 ft^3/s (9.91 m^3/s); minimum discharge, 1.7 ft^3/s (0.048 m^3/s) Aug. 12, gage height, 0.85 ft (0.259 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	44	28	30	90	55	68	82	35	46	15	3.8
2	27	44	30	30	80	50	68	82	38	45	20	5.6
3	27	44	32	30	65	48	68	85	49	39	17	4.0
4	27	44	38	30	52	48	68	88	51	52	23	5.8
5	28	44	38	30	50	50	87	105	55	51	17	6.8
6	28	44	40	30	46	50	67	158	66	35	20	6.8
7	29	44	40	32	44	50	66	111	93	35	20	6.5
8	31	44	40	34	50	50	66	96	119	42	19	7.2
9	34	44	40	34	60	52	66	96	62	45	14	7.5
10	39	44	40	36	80	55	66	95	50	41	8.7	8.1
11	42	44	40	36	75	60	67	88	51	42	4.0	8.1
12	34	30	38	36	70	70	66	96	53	43	1.8	8.7
13	34	28	36	36	70	56	68	117	56	38	2.8	9.3
14	34	30	34	36	65	61	70	89	59	22	2.6	8.7
15	34	34	34	36	85	68	71	84	180	7.5	2.8	7.5
16	32	40	34	38	85	66	72	80	111	6.8	6.6	8.7
17	32	40	34	38	65	66	71	73	85	11	12	11
18	32	39	34	40	65	66	75	72	77	19	13	11
19	32	38	34	42	65	69	75	66	64	27	7.5	9.9
20	32	32	34	44	65	65	76	70	67	25	7.5	9.3
21	34	28	36	44	61	66	76	65	76	26	12	9.3
22	48	30	36	44	57	67	77	67	72	25	12	11
23	79	30	36	44	56	77	81	66	78	31	12	11
24	51	30	36	44	82	70	81	65	72	28	12	11
25	46	30	36	44	84	70	80	59	70	27	9.9	9.9
26	45	28	36	44	59	70	79	57	75	22	7.2	11
27	45	28	36	48	59	70	84	43	73	16	4.4	8.7
28	45	26	36	55	67	70	142	36	72	14	3.0	8.7
29	44	28	36	70	60	70	98	35	67	18	3.8	9.3
30	44	24	36	85	---	70	89	29	49	19	7.2	11
31	44	---	34	90	---	70	---	30	---	17	4.0	---
TOTAL	1161	1075	1110	1310	1832	1925	2268	2383	2103	915.3	321.8	255.2
MEAN	37.5	35.8	35.8	42.3	63.2	62.1	75.6	76.9	70.1	29.5	10.4	8.51
MAX	79	44	40	90	90	77	142	156	180	52	23	11
MIN	27	24	28	30	44	48	66	29	35	6.8	1.8	3.8
AC-FT	2300	2130	2200	2800	3630	3820	4500	4730	4170	1820	638	508

CAL YR 1975 TOTAL 40143.0 MEAN 110 MAX 1000 MIN 13 AC-FT 79620
WTR YR 1976 TOTAL 16659.3 MEAN 45.5 MAX 180 MIN 1.8 AC-FT 33040

06296003 ROSEBUD CREEK AT MOUTH, NEAR ROSEBUD, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
15...	1700	34	1170	8.4	15.0	8.0	35	11.1	103	1.6	600	180
NOV												
18...	1200	38	1360	8.4	1.5	2.0	40	11.0	87	.8	580	160
DEC												
04...	1030	36	1600	8.3	5.5	.5	25	12.4	94	.4	630	160
JAN												
08...	0930	35	1500	7.7	-23.5	.0	20	11.8	89	.7	630	160
FEB												
05...	1500	51	1170	8.1	-3.5	.0	85	12.6	95	2.2	440	110
MAR												
04...	1000	48	1550	8.1	-12.0	.0	10	12.6	95	.7	620	180
APR												
06...	1000	69	1360	8.4	19.5	8.0	70	10.9	101	.8	610	220
MAY												
04...	1030	88	1360	8.4	16.5	11.5	100	9.6	97	.9	600	210
JUN												
02...	1000	35	1360	8.4	22.5	19.5	55	9.5	113	1.7	580	200
JUL												
06...	1400	31	1130	8.3	28.5	25.0	70	8.3	111	.8	510	150
AUG												
02...	1305	20	1380	8.3	28.5	23.5	30	8.6	110	2.0	580	200
SEP												
07...	1510	5.8	1900	8.8	18.0	20.0	20	9.4	113	.8	640	220

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
OCT											
15...	78	98	90	1.6	11	487	14	340	5.8	.7	15
NOV											
18...	74	97	94	1.7	10	485	13	380	5.8	.6	13
DEC											
04...	86	100	120	2.1	11	570	0	430	6.4	.6	16
JAN											
08...	92	97	92	1.6	9.6	572	0	370	5.7	.6	17
FEB											
05...	67	65	89	1.9	8.9	399	0	310	4.5	.4	12
MAR											
04...	87	98	110	1.9	11	540	0	410	6.3	1.1	15
APR											
06...	85	97	100	1.8	8.7	475	0	410	5.3	.5	11
MAY											
04...	77	100	100	1.8	9.0	455	12	430	5.5	.6	9.9
JUN											
02...	69	100	120	2.2	8.3	470	0	430	6.3	.6	14
JUL											
06...	65	85	87	1.7	9.0	424	7	320	4.7	.6	15
AUG											
02...	66	100	130	2.4	11	454	0	430	7.1	.6	13
SEP											
07...	73	110	190	3.3	13	476	14	620	2.2	.6	7.6

06296003 ROSEBUD CREEK AT MOUTH, NEAR ROSEBUD, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT											
15...	893	1.21	82.0	.01	.01	.65	.66	.67	.08	190	70
NOV											
18...	927	1.26	95.6	.01	.02	.76	.78	.79	.05	170	20
DEC											
04...	1050	1.43	102	.02	.00	.86	.86	.88	.02	230	20
JAN											
08...	966	1.31	91.3	.27	.08	.22	.30	.57	.05	160	0
FEB											
05...	754	1.03	104	.29	.02	1.1	1.1	1.4	.13	140	40
MAR											
04...	1000	1.36	130	.17	.04	.54	.58	.75	.03	160	0
APR											
06...	952	1.29	179	.00	.04	.76	.80	.80	.10	190	0
MAY											
04...	969	1.32	230	.01	.01	1.4	1.4	1.4	.21	180	10
JUN											
02...	980	1.33	92.6	.20	.01	.67	.68	.88	.09	220	20
JUL											
06...	803	1.09	67.2	.29	.00	.48	.48	.77	.06	180	0
AUG											
02...	982	1.34	53	.00	.01	.52	.53	.53	.07	230	10
SEP											
07...	1270	1.73	19.9	.02	.01	.56	.57	.59	.03	290	130

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BISMUTH (BI) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)
OCT											
15...	1700	1500	--	2	--	--	10	--	--	10	--
NOV											
18...	1200	1300	0	2	1	70	10	10	<40	<10	0
JAN											
08...	0930	710	--	0	--	--	0	--	--	0	--
APR											
06...	1000	2000	--	1	--	--	0	--	--	<10	--
JUL											
06...	1400	2400	--	6	--	--	0	--	--	<10	--

DATE	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED GALLIUM (GA) (UG/L)	DIS-SOLVED GER-MANIUM (GE) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)
OCT										
15...	40	--	--	10	--	--	--	2000	<100	--
NOV										
18...	10	10	<20	<10	0	<8	<40	1800	<100	1
JAN										
08...	0	--	--	10	--	--	--	1000	<100	--
APR										
06...	20	--	--	10	--	--	--	3100	<100	--
JUL										
06...	10	--	--	20	--	--	--	3400	<100	--

DATE	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)
OCT										
15...	40	--	80	--	.3	--	2	--	100	--
NOV										
18...	50	40	70	30	.0	.0	3	2	<50	3
JAN										
08...	50	--	60	--	.0	--	3	--	<50	--
APR										
06...	50	--	110	--	.0	--	1	--	<50	--
JUL										
06...	50	--	130	--	.0	--	0	--	<50	--

06296003 ROSEBUD CREEK AT MOUTH, NEAR ROSEBUD, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED STRON-TIUM (SR) (UG/L)	DIS-SOLVED TIN (SN) (UG/L)	DIS-SOLVED TI-TANIUM (TI) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	DIS-SOLVED ZIR-CONIUM (ZR) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
15...	0	--	--	--	--	--	--	--	10	--
NOV										
18...	0	1	<2	1100	<20	<10	1.6	<30	30	20
JAN										
08...	1	--	--	--	--	--	--	--	20	--
APR										
06...	0	--	--	--	--	--	--	--	40	--
JUL										
06...	1	--	--	--	--	--	--	--	20	--

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	DIS-SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS-PENDED GROSS ALPHA AS U-NAT. (UG/L)	DIS-SOLVED GROSS BETA AS CS-137 (PC/L)	SUS-PENDED GROSS BETA AS CS-137 (PC/L)	DIS-SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS-PENDED GROSS BETA AS SR90 /Y90 (PC/L)	DIS-SOLVED RA-226 (RADON METHOD) (PC/L)	DIS-SOLVED URANIUM (DIRECT FLUORO-METRIC) (PC/L)	TOTAL FILT-RABLE RESIDUE (MG/L)	TOTAL NON-FILT-RABLE RESIDUE (MG/L)
NOV											
18...	1200	<14	2.1	15	3.3	12	3.0	.09	3.7	980	42

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
OCT					
15...	1700	8.0	34	123	11
NOV					
18...	1200	2.0	38	131	13
DEC					
04...	1030	.5	36	105	10
JAN					
08...	0930	.0	35	132	12
FEB					
05...	1500	.0	51	187	39
MAR					
04...	1000	.0	48	78	9.9
APR					
06...	1000	8.0	69	183	35
MAY					
04...	1030	11.5	88	316	74
JUN					
02...	1000	19.5	35	119	11.2
JUL					
06...	1400	25.0	31	234	20
AUG					
02...	1305	23.5	20	138	7.5
SEP					
07...	1510	20.0	5.8	94	1.5

06296120 YELLOWSTONE RIVER NEAR MILES CITY, MT

LOCATION.--Lat 46°23'51", long 105°53'36", in SE¼SW¼ sec.31, T.8 N., R.47 E., Custer County, Hydrologic Unit 10100001, at Keogh Bridge, 1.6 mi (2.6 km) upstream from Tongue River, 2.0 mi (3.2 km) west of Miles City, and at mile 183.1 (294.6 km).
DRAINAGE AREA.--42,847 mi² (110,974 km²).
PERIOD OF RECORD.--Water years 1969 to current year.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to current year.
WATER TEMPERATURES: October 1968 to current year.
REMARKS.--Water discharge computed by subtracting the discharge of Tongue River at Miles City (station 06308500) from that of Yellowstone River at Miles City (station 06309000). Flow affected by reservoirs and diversions for irrigation upstream from station.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,030 micromhos Jan. 10, 1970; minimum daily, 226 micromhos May 30, 1969.
WATER TEMPERATURES: Maximum daily, 26.5°C Aug. 8, 1971, July 19, 1974; minimum, 0.0°C on many days during winter periods most years.
EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 839 micromhos Mar. 7; minimum daily, 238 micromhos July 5.
WATER TEMPERATURES: Maximum daily, 26.0°C July 24, Aug. 22; minimum daily, 0.0°C on many days during November to March.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	CHEMICAL OXYGEN DEMAND (HIGH LEVEL) (MG/L)	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)
OCT											
09...	0845	8150	630	7.9	5.0	8.5	10	9.8	91	13	--
22...	0930	9460	540	8.5	.5	8.5	30	11.6	107	8	.9
NOV											
13...	0845	9850	663	8.0	.5	1.5	4	12.6	99	9	--
20...	1030	10500	655	8.5	-7.0	1.5	4	12.5	97	13	.4
DEC											
04...	0845	9000	740	7.7	1.0	.0	9	12.4	93	8	--
18...	0945	6800	800	8.3	-1.0	.0	10	13.3	99	11	--
JAN											
14...	1215	9000	808	8.2	.0	.0	4	13.0	97	7	--
30...	1100	10000	700	8.3	1.0	1.0	9	13.0	99	5	.4
FEB											
05...	0830	8000	770	8.0	-10.0	.0	15	13.1	98	2	--
26...	1030	9630	760	8.1	5.0	3.5	30	12.2	100	20	.6
MAR											
04...	0830	6500	739	8.3	-18.0	.0	20	12.2	91	53	--
18...	1200	9810	805	8.2	20.0	7.0	15	11.6	104	4	1.5
APR											
08...	0730	6490	778	8.1	13.0	10.5	10	9.8	95	16	--
30...	1800	14700	780	8.1	16.5	10.5	110	10.6	103	16	--
MAY											
10...	1800	22200	525	8.2	26.0	16.0	80	8.6	95	26	--
19...	0945	29000	380	8.1	22.0	15.5	80	8.6	93	27	1.3
JUN											
10...	0830	42700	283	8.1	25.0	17.0	--	8.4	94	47	--
15...	1510	41700	312	7.2	23.5	15.0	80	9.4	101	58	1.6
JUL											
09...	0830	29700	285	7.8	27.0	21.5	20	7.6	94	15	--
22...	0900	19500	310	8.1	25.5	22.0	10	7.8	96	6	.6
AUG											
05...	1315	18700	360	8.2	22.0	21.0	370	8.4	102	74	--
17...	1415	9920	490	8.5	32.0	23.0	15	9.0	113	39	1.9
SEP											
02...	0830	7490	522	8.7	24.0	20.0	7	8.8	105	15	--
21...	1430	8940	525	8.5	29.0	17.5	9	9.5	107	6	3.5

06296120 YELLOWSTONE RIVER NEAR MILES CITY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)
OCT											
09...	280	25	--	--	--	--	--	--	--	--	--
22...	750	62	220	62	55	20	52	1.5	3.3	192	0
NOV											
13...	7	4	--	--	--	--	--	--	--	--	--
20...	11	7	220	70	56	20	54	1.6	3.2	186	0
DEC											
04...	56	5	--	--	--	--	--	--	--	--	--
18...	91	14	270	96	69	24	64	1.7	3.6	213	0
JAN											
14...	13	10	--	--	--	--	--	--	--	--	--
30...	3000	6	240	77	61	21	61	1.7	3.4	197	0
FEB											
05...	49	46	--	--	--	--	--	--	--	--	--
26...	110	<1	250	93	64	23	62	1.7	3.5	197	0
MAR											
04...	110	6	--	--	--	--	--	--	--	--	--
18...	26	1	270	99	66	26	67	1.8	3.8	211	0
APR											
08...	15	2	--	--	--	--	--	--	--	--	--
30...	5400	460	260	100	61	27	78	2.1	3.8	197	0
MAY											
10...	820	100	--	--	--	--	--	--	--	--	--
19...	3200	200	150	41	37	13	27	1.0	2.3	128	0
JUN											
10...	1900	200	--	--	--	--	--	--	--	--	--
15...	900	340	110	28	28	9.6	22	.9	2.0	99	0
JUL											
09...	--	70	--	--	--	--	--	--	--	95	--
22...	220	110	110	23	29	10	24	1.0	2.2	110	0
AUG											
05...	2100	1300	--	--	--	--	--	--	--	--	--
17...	50	4	170	47	44	15	38	1.3	2.9	152	0
SEP											
02...	44	10	--	--	--	--	--	--	--	--	--
21...	37	40	190	50	46	18	44	1.4	3.2	169	0

DATE	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	SUSPENDED SOLIDS (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)
OCT											
09...	155	--	--	--	--	423	--	.58	9310	60	.08
22...	157	160	8.1	.4	9.5	412	403	.56	10500	76	.16
NOV											
13...	148	--	--	--	--	494	--	.67	13100	9	.18
20...	153	180	8.4	.4	9.4	423	423	.58	12000	9	.22
DEC											
04...	150	--	--	--	--	500	--	.68	12200	18	.36
18...	175	220	9.7	.4	12	521	508	.71	9570	18	.42
JAN											
14...	168	--	--	--	--	546	--	.74	13300	8	.47
30...	162	200	10	.5	10	487	464	.66	13100	14	.50
FEB											
05...	158	--	--	--	--	425	--	.58	9180	13	.43
26...	162	220	10	.4	10	515	490	.70	13400	72	.40
MAR											
04...	142	--	--	--	--	481	--	.65	8440	43	.44
18...	173	230	10	.4	11	532	518	.72	14100	70	.41
APR											
08...	165	--	--	--	--	525	--	.71	9200	16	.14
30...	162	260	10	.4	9.8	557	547	.76	22100	110	.38
MAY											
10...	140	--	--	--	--	357	--	.49	21400	195	.46
19...	105	89	5.2	.2	12	251	249	.34	19700	200	.21
JUN											
10...	80	--	--	--	--	192	--	.26	22100	313	.16
15...	81	69	4.1	.2	11	208	195	.28	23400	267	.22
JUL											
09...	78	--	--	--	--	179	--	.24	14400	39	.13
22...	90	73	4.7	.3	9.7	208	207	.28	11000	21	.08
AUG											
05...	162	--	--	--	--	227	--	.31	11500	31	.27
17...	125	110	6.4	.4	10	302	302	.41	8090	37	.09
SEP											
02...	145	--	--	--	--	340	--	.46	6880	12	.00
21...	139	130	7.4	.4	8.7	339	341	.46	8180	21	.15

06296120 YELLOWSTONE RIVER NEAR MILES CITY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	DISSOLVED ORGANIC CARBON (C) (MG/L)	SUSPENDED ORGANIC CARBON (C) (MG/L)
OCT										
09...	.03	.46	.49	.57	.05	--	--	--	--	--
22...	.03	.63	.66	.82	.09	150	0	--	5.4	.1
NOV										
13...	.03	.76	.79	.97	.02	--	--	2.9	--	--
20...	.00	.40	.40	.62	.00	140	10	4.9	--	--
DEC										
04...	.03	.48	.51	.87	.01	--	--	--	--	--
18...	.04	.45	.49	.91	.02	150	20	7.5	--	--
JAN										
14...	.08	.25	.33	.80	.03	--	--	3.0	--	--
30...	.09	.50	.59	1.1	.04	90	10	3.4	--	--
FEB										
05...	.05	.53	.58	1.0	.04	--	--	--	--	--
26...	.07	.32	.39	.79	.11	150	40	4.4	3.2	1.0
MAR										
04...	.04	.55	.59	1.0	.05	--	--	4.1	--	--
18...	.03	.55	.58	.99	.06	190	10	4.2	--	--
APR										
08...	.04	.42	.46	.60	.04	--	--	5.6	--	--
30...	.04	.91	.95	1.3	.20	180	30	7.3	5.5	2.4
MAY										
10...	.04	.62	.66	1.1	.27	--	--	11	--	--
19...	.04	.84	.88	1.1	.29	50	40	9.5	--	--
JUN										
10...	.01	.72	.73	.89	.34	--	--	5.5	--	--
15...	.07	.38	.45	.67	.26	100	40	7.8	--	--
JUL										
09...	.04	1.1	1.1	1.2	.11	--	--	8.3	--	--
22...	.00	.61	.61	.69	.07	90	30	--	3.3	4.5
AUG										
05...	.00	2.0	2.0	2.3	.82	--	--	16	--	--
17...	.00	.23	.23	.32	.07	120	10	2.1	--	--
SEP										
02...	.00	.45	.45	.45	.03	--	--	4.7	--	--
21...	.01	.85	.86	1.0	.06	140	10	4.7	--	--

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	DISSOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)
OCT											
22...	0930	2200	10	6	6	--	0	10	0	10	0
JAN											
30...	1100	240	0	5	4	10	0	<10	0	0	0
APR											
30...	1800	5100	0	12	4	10	0	<10	0	20	0
JUL											
22...	0900	2700	30	7	8	0	0	<10	1	10	0

DATE	TOTAL COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	DISSOLVED LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)
OCT										
22...	10	0	1600	<100	1	40	40	50	5	.1
JAN										
30...	10	1	300	<100	1	40	40	20	0	.1
APR										
30...	50	2	7000	<100	2	40	40	260	10	.2
JUL										
22...	50	2	2900	<100	0	30	30	100	0	.0

DATE	DISSOLVED MERCURY (HG) (UG/L)	TOTAL MOLYBDENUM (MO) (UG/L)	DISSOLVED MOLYBDENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DISSOLVED NICKEL (NI) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	DISSOLVED VANADIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT										
22...	.1	4	2	<10	6	1	1	2.0	30	20
JAN										
30...	.1	2	2	<50	2	2	2	1.6	20	0
APR										
30...	.0	1	1	<50	4	2	1	.7	50	0
JUL										
22...	.0	1	2	<50	0	1	1	.8	10	0

06296120 YELLOWSTONE RIVER NEAR MILES CITY, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	637	613	710	722	681	745	782	835	299	---	389	525
2	636	622	727	---	671	739	782	762	296	---	406	529
3	637	590	733	617	632	801	776	764	306	309	396	539
4	641	643	683	663	647	793	772	705	324	259	386	545
5	642	636	691	760	677	771	775	655	319	238	396	549
6	651	635	671	671	710	830	770	649	288	246	412	550
7	650	635	673	---	760	839	782	616	277	248	402	550
8	643	619	648	799	758	827	761	569	298	268	411	550
9	644	623	651	719	812	801	739	573	316	270	411	548
10	654	652	657	721	790	780	769	574	288	269	409	558
11	658	665	665	711	768	770	733	511	277	270	423	560
12	681	658	674	729	761	793	711	510	279	270	423	544
13	679	665	669	653	715	798	710	504	319	271	434	544
14	668	671	674	723	681	799	687	459	321	279	446	544
15	658	669	653	688	678	798	679	449	326	282	467	542
16	656	660	668	671	679	805	664	448	395	298	465	543
17	660	654	748	664	689	786	678	453	400	309	469	540
18	673	645	739	663	707	800	668	412	408	304	472	---
19	666	645	755	658	724	801	673	412	391	322	474	539
20	651	656	754	646	727	808	748	409	397	327	486	541
21	644	653	740	588	732	805	751	359	386	319	491	529
22	635	658	669	632	730	770	730	321	369	335	491	532
23	644	671	575	659	739	759	721	325	338	335	499	516
24	672	640	707	669	748	760	721	313	318	350	500	514
25	683	523	708	690	758	767	719	308	308	357	502	512
26	660	595	653	704	748	772	721	310	313	341	506	515
27	658	655	694	716	752	761	706	329	332	345	518	508
28	653	630	679	718	751	761	702	328	341	350	522	500
29	641	671	679	719	760	761	699	---	361	359	521	502
30	638	710	679	729	---	761	805	---	366	366	525	500
31	637	---	679	701	---	764	---	297	---	379	521	---
MONTH	653	642	687	690	724	785	731	488	332	306	457	533

YEAR MAX 839 MIN 238 MEAN 587

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.0	6.0	0.0	0.0	2.5	0.0	8.0	13.5	19.5	---	23.5	23.0
2	13.5	6.5	0.0	---	2.0	0.0	7.0	13.5	20.0	---	23.5	22.0
3	14.0	8.0	2.0	0.0	0.0	0.0	9.5	14.0	19.5	22.0	24.0	22.5
4	13.0	9.0	3.0	0.0	0.0	0.0	10.0	14.0	19.0	23.5	23.0	22.5
5	13.0	9.0	2.5	0.0	0.0	0.0	12.5	15.0	19.5	23.0	22.0	23.0
6	14.0	8.0	2.0	0.0	0.5	3.5	9.0	13.5	20.0	24.0	23.0	23.0
7	12.0	8.0	2.0	---	2.0	3.5	14.0	14.5	20.0	25.0	24.0	19.0
8	8.5	5.5	1.0	0.0	2.5	6.0	15.5	17.0	20.5	25.0	25.0	18.0
9	9.5	4.0	2.5	0.0	2.5	3.5	17.0	17.0	19.5	25.0	23.5	18.0
10	10.0	2.5	2.0	0.5	2.5	5.5	13.0	18.0	21.0	25.0	22.5	18.5
11	10.0	2.0	0.0	0.5	3.0	1.0	14.5	16.5	20.0	25.5	24.0	19.5
12	8.0	2.0	0.0	1.0	2.0	2.5	15.5	15.0	16.0	25.5	25.0	19.0
13	8.0	4.0	0.0	0.0	4.5	3.0	16.0	17.0	15.0	23.5	24.0	19.0
14	7.0	4.0	0.0	0.0	2.5	3.5	15.0	15.5	14.5	23.0	24.0	20.0
15	8.0	4.0	0.0	1.5	2.5	3.0	15.5	15.5	15.0	21.5	24.0	21.0
16	9.0	3.5	0.0	2.0	2.5	5.5	12.0	17.5	14.5	23.0	24.0	22.0
17	10.0	4.0	0.0	2.0	3.0	7.5	12.0	18.0	15.0	24.0	24.0	22.0
18	11.5	3.0	1.0	1.0	3.0	9.5	11.5	16.5	16.0	24.5	24.0	---
19	11.0	2.5	1.0	1.5	3.0	8.5	12.5	17.0	18.5	24.0	24.0	19.5
20	9.5	1.0	1.0	2.5	3.0	6.5	11.0	17.0	19.0	23.5	24.0	18.0
21	8.0	1.0	1.0	0.5	4.0	5.0	12.0	18.0	20.5	24.0	25.0	18.0
22	6.0	0.0	0.5	1.0	4.5	9.0	12.0	17.5	20.0	23.5	26.0	18.0
23	5.5	0.0	0.0	1.0	6.0	8.5	10.5	17.0	18.0	25.5	25.0	18.0
24	5.0	0.0	1.5	1.0	5.0	9.0	12.0	16.5	16.5	26.0	23.5	18.0
25	5.5	0.0	2.0	1.0	5.5	8.5	12.5	16.0	15.5	25.0	24.5	18.5
26	5.0	0.0	0.5	0.0	5.5	8.0	9.5	16.5	16.0	25.5	21.5	15.5
27	3.0	0.0	1.5	1.5	5.0	7.5	7.5	17.5	18.0	24.0	20.0	16.5
28	5.0	0.0	2.0	3.5	2.0	8.5	7.5	19.5	18.5	25.0	21.0	17.0
29	5.5	0.0	3.0	4.0	1.0	8.0	8.0	18.5	20.0	24.0	22.0	17.5
30	6.0	0.0	2.5	1.5	---	9.0	11.0	18.0	22.0	23.0	20.5	18.5
31	6.0	---	1.0	3.0	---	10.0	---	18.5	---	24.0	22.5	---
MONTH	9.0	3.5	1.0	1.0	3.0	5.5	12.0	16.5	18.0	24.0	23.5	19.5

YEAR MAX 26.0 MIN 0.0 MEAN 11.5

06296120 YELLOWSTONE RIVER NEAR MILES CITY, MT--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .062 MM
OCT						
22...	0930	8.5	9460	60	1530	--
NOV						
20...	1030	1.5	10500	7	198	--
DEC						
18...	0945	.0	6800	18	330	--
JAN						
30...	1100	1.0	10000	26	702	--
FEB						
26...	1030	3.5	9630	112	2910	--
MAR						
18...	1200	7.0	9810	72	1907	--
APR						
30...	1800	10.5	14700	372	14800	--
MAY						
19...	0945	15.5	29000	431	33700	--
JUN						
15...	1510	15.0	41700	521	58700	--
JUL						
22...	0900	22.0	19500	147	7740	47
AUG						
17...	1415	23.0	9920	60	1600	74
SEP						
21...	1430	17.5	8940	47	1130	72

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON

Date	Length of exposure (days)	Biomass (g/m^2) Dry weight	Ash weight	Chlorophyll a (mg/m^2)	Chlorophyll b (mg/m^2)	Biomass pigment ratio	Sampling method
May 19	19	.154	.077	.000	.000	0	Polyethylene strip

PHYTOPLANKTON
OCT. 22, 1975
0930 HOURS
8,500 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT
	CHRYSOPHYTA			
	.BACILLARIOPHYCEAE	DIATOMS		
	..PENNALES	PENNATE		
	...FRAGILARIACEAE			
L	....H.ARCUS			0
	..CENTRALES	CENTRIC		
	...COSCINODISCACEAE			
	....CYCLOTELLA		440	5
	..PENNALES	PENNATE		
	...ACHNANTHACEAE			
	....ACHNANTHES		590	7
	....COCCONEIS		290	3
	....RHOICOSPHENIA		290	3
	...CYMBELLACEAE			
D	....CYMBELLA		1,500	17
	...DIATOMACEAE			
	....DIATOMA		150	2
	...GOMPHONEMATACEAE			
	....GOMPHONEMA		440	5
	...NAVICULACEAE	NAVICULOID		
D	....NAVICULA		2,100	24
	...NITZSCHIACEAE			
D	....NITZSCHIA		2,800	33
		TOTALS	8,500	99

2.604=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
ORDER 0.294
FAMILY 2.397
GENERA 2.604

06296120 YELLOWSTONE RIVER NEAR MILES CITY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
NOV. 20, 1975
1030 HOURS
1,200 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...SCENEDESMACEAE				
	....SCENEDESMUS		120	10	
		TOTALS	120	10	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
L	....CYCLOTELLA			0	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		40	3	
	....COCCONEIS		40	3	
	....RHOICOSPHENIA		40	3	
	...CYMBELLACEAE				
	....CYMBELLA		80	7	
L	....EPITHEMIA			0	
	...DIATOMACEAE				
	....DIATOMA		40	3	
	...EUNOTIACEAE				
L	....EUNOTIA			0	
	...FRAGILARIACEAE				
L	....SYNEDRA			0	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		80	7	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		440	37	
	...NITZSCHIACEAE				
D	....NITZSCHIA		320	27	
		TOTALS	1,100	90	2.308=DIVERSITY

PHYL/DIV 0.469
CLASS 0.469
ORDER 0.469
FAMILY 2.388
GENERA 2.547

DEC. 18, 1975
0945 HOURS
960 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
L	....CYCLOTELLA			0	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		33	3	
	....COCCONEIS		66	7	
	....RHOICOSPHENIA		66	7	
	...CYMBELLACEAE				
D	....CYMBELLA		170	17	
L	....EPITHEMIA			0	
	...DIATOMACEAE				
	....DIATOMA		33	3	
	...FRAGILARIACEAE				
L	....SYNEDRA			0	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		200	21	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		330	34	
	...NITZSCHIACEAE				
	....NITZSCHIA		33	3	
	...SURIRELLACEAE				
L	....CYMATOPLEURA			0	
	....SURIRELLA		33	3	
		TOTALS	960	98	2.639=DIVERSITY

FAMILY 2.377
GENERA 2.639

06296120 YELLOWSTONE RIVER NEAR MILES CITY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

JAN. 30, 1976
1100 HOURS
850 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		56	7	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		56	7	
	....RHOICOSPHENIA		56	7	
	...CYMBELLACEAE				
	....CYMBELLA		56	7	
	...DIATOMACEAE				
L	....DIATOMA			0	
	...FRAGILARIACEAE				
L	....SYNEDRA			0	
	...GOMPHONEMATACEAE				
L	....GOMPHONEMA			0	
	...NAVICULACEAE	NAVICULOID			
	....AMPHIPLEURA		56	7	
D	....NAVICULA		560	67	
	...NITZSCHIACEAE				
L	....HANTZSCHIA			0	
L	....NITZSCHIA			0	
	...SURIRELLACEAE				
L	....CYMATOPLEURA			0	
L	....SURIRELLA			0	
		TOTALS	850	102	1.692=DIVERSITY

ORDER 0.353
FAMILY 1.237
GENERA 1.692

FEB. 26, 1976
1030 HOURS
2,300 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		46	2	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		46	2	
	....COCCONEIS		46	2	
L	....RHOICOSPHENIA			0	
	...CYMBELLACEAE				
	....CYMBELLA		320	14	
L	....EPITHEMIA			0	
	...DIATOMACEAE				
	....DIATOMA		230	10	
	...FRAGILARIACEAE				
	....FRAGILARIA		92	4	
	....SYNEDRA		92	4	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		370	16	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		600	27	
	...NITZSCHIACEAE				
	....NITZSCHIA		320	14	
	...SURIRELLACEAE				
	....SURIRELLA		92	4	
		TOTALS	2,300	99	2.982=DIVERSITY

ORDER 0.144
FAMILY 2.859
GENERA 2.982

06296120 YELLOWSTONE RIVER NEAR MILES CITY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAR. 18, 1976
1200 HOURS
2,700 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		120	5	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		61	2	
	....COCCONEIS		61	2	
	...CYMBELLACEAE				
	....CYMBELLA		180	7	
	...DIATOMACEAE				
	....DIATOMA		240	9	
	...FRAGILARIACEAE				
	....SYNEDRA		120	5	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		61	2	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		1,000	39	
	...NITZSCHIACEAE				
	....NITZSCHIA		300	11	
		TOTALS	2,200	82	2.452=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
D	....OSCILLATORIA		490	18	
		TOTALS	490	18	0.000=DIVERSITY

PHYL/DIV 0.684
CLASS 0.684
ORDER 0.937
FAMILY 2.645
GENERA 2.690

APR. 30, 1976
1800 HOURS
5,400 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		130	2	
		TOTALS	130	2	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		130	2	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		130	2	
	....COCCONEIS		250	5	
	...CYMBELLACEAE				
	....CYMBELLA		760	14	
	...DIATOMACEAE				
L	....DIATOMA			0	
	...FRAGILARIACEAE				
	....SYNEDRA		250	5	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		760	14	
	...NAVICULACEAE	NAVICULOID			
L	....CALONEIS			0	
D	....NAVICULA		2,400	44	
	...NITZSCHIACEAE				
	....NITZSCHIA		510	9	
	...SURIRELLACEAE				
L	....CYMATOPLEURA			0	
	....SURIRELLA		130	2	
		TOTALS	5,300	97	2.446=DIVERSITY

PHYL/DIV 0.159
CLASS 0.159
ORDER 0.318
FAMILY 2.485
GENERA 2.549

06296120 YELLOWSTONE RIVER NEAR MILES CITY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAY 19, 1976
0945 HOURS
5,000 CELLS/ML

ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
CHLOROPHYTA	GREEN ALGAE			
.CHLOROPHYCEAE				
..CHLOROCOCCALES				
...OOCYSTACEAE				
....ANKISTRODESMUS		42	1	
...SCENEDESMACEAE				
....CRUCIGENIA		170	3	
	TOTALS	210	4	0.722=DIVERSITY
CHRYSOPHYTA				
.BACILLARIOPHYCEAE	DIATOMS			
..PENNALES	PENNATE			
...FRAGILARIACEAE				
....H.ARCUS		42	1	
..CENTRALES	CENTRIC			
...COSCINODISCACEAE				
....CYCLOTELLA		130	3	
..PENNALES	PENNATE			
...ACHNANTHACEAE				
....ACHNANTHES		340	7	
L ....COCCONEIS			0	
....RHOICOSPHENIA		85	2	
...CYMBELLACEAE				
....CYMBELLA		210	4	
....EPITHEMIA		85	2	
...DIATOMACEAE				
....DIATOMA		130	3	
...FRAGILARIACEAE				
....FRAGILARIA		250	5	
....SYNEDRA		300	6	
...GOMPHONEMATACEAE				
....GOMPHONEMA		550	11	
...MERIDIONACEAE				
....MERIDION		85	2	
...NAVICULACEAE	NAVICULOID			
....FRUSTULIA		42	1	
O ....NAVICULA		850	17	
...NITZSCHIACEAE				
....NITZSCHIA		300	6	
...SURIRELLACEAE				
....SURIRELLA		130	3	
	TOTALS	3,500	73	3.420=DIVERSITY
CYANOPHYTA	BLUE-GREEN ALGAE			
.MYXOPHYCEAE				
..OSCILLATORIALES	FILAMENTOUS			
...OSCILLATORIACEAE				
O ....LYNGBYA		1,300	25	
	TOTALS	1,300	25	0.000=DIVERSITY

PHYL/DIV 1.053
CLASS 1.053
ORDER 1.276
FAMILY 3.218
GENERA 3.489

06296120 YELLOWSTONE RIVER NEAR MILES CITY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
JUNE 15, 1976
1510 HOURS
1,700 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT
	CHLOROPHYTA	GREEN ALGAE		
	.CHLOROPHYCEAE			
	..CHLOROCOCCALES			
	...SCENEDESMACEAE			
L	....SCENEDESMUS			0
	CHRYSOPHYTA			
	.BACILLARIOPHYCEAE	DIATOMS		
	..CENTRALES	CENTRIC		
	...COSCINODISCACEAE			
	....MELOSIRA		110	6
	..PENNALES	PENNATE		
	...ACHNANTHACEAE			
	....ACHNANTHES		190	11
	....COCCONEIS		110	6
	....RHOICOSPHENIA		54	3
	...CYMBELLACEAE			
	....CYMBELLA		54	3
	...DIATOMACEAE			
	....DIATOMA		190	11
	...FRAGILARIACEAE			
L	....FRAGILARIA			0
	...GOMPHONEMATACEAE			
	....GOMPHONEMA		210	12
	...NAVICULACEAE	NAVICULOID		
D	....NAVICULA		620	36
	...NITZSCHIACEAE			
	....NITZSCHIA		130	8
	...SURIRELLACEAE			
	....SURIRELLA		54	3
		TOTALS	1,700	99

2.860=DIVERSITY

ORDER 0.337
FAMILY 2.572
GENERA 2.860

JULY 22, 1976
0900 HOURS
4,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT
	CHLOROPHYTA	GREEN ALGAE		
	.CHLOROPHYCEAE			
	..VOLVOCALES			
	...CHLAMYDOMONADACEAE			
	....CHLAMYDOMONAS		100	3
		TOTALS	100	3

0.000=DIVERSITY

	CHRYSOPHYTA			
	.BACILLARIOPHYCEAE	DIATOMS		
	..PENNALES	PENNATE		
	...FRAGILARIACEAE			
	....H.ARCUS		100	3
	..CENTRALES	CENTRIC		
	...COSCINODISCACEAE			
O	....CYCLOTELLA		1,100	29
	..PENNALES	PENNATE		
	...ACHNANTHACEAE			
	....ACHNANTHES		100	3
	....COCCONEIS		100	3
	...CYMBELLACEAE			
	....CYMBELLA		210	5
	...GOMPHONEMATACEAE			
	....GOMPHONEMA		310	8
	...NAVICULACEAE	NAVICULOID		
	....NAVICULA		100	3
	...NITZSCHIACEAE			
D	....NITZSCHIA		1,800	45
		TOTALS	3,900	99

2.120=DIVERSITY

PHYL/DIV 0.176
CLASS 0.176
ORDER 1.191
FAMILY 2.188
GENERA 2.240

06296120 YELLOWSTONE RIVER NEAR MILES CITY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

AUG. 17, 1976
1415 HOURS
38,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...SCENEDESMACEAE				
	....SCENEDESMUS		2,400	6	
		TOTALS	2,400	6	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		17,000	45	
D	....MELOSIRA		14,000	37	
	..PENNALES	PENNATE			
	...CYMBELLACEAE				
	....CYMBELLA		410	1	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		410	1	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		410	1	
	...NITZSCHIACEAE				
	....NITZSCHIA		2,900	8	
	...SURIRELLACEAE				
	....SURIRELLA		410	1	
		TOTALS	36,000	94	1.626=DIVERSITY

PHYL/DIV 0.345
CLASS 0.345
ORDER 0.857
FAMILY 1.055
GENERA 1.866

SEP. 21, 1976
1430 HOURS
12,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....KIRCHNERIELLA		220	2	
	...SCENEDESMACEAE				
	....SCENEDESMUS		870	7	
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		220	2	
		TOTALS	1,300	11	1.252=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		6,900	57	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		650	5	
	....COCCONEIS		430	4	
	...CYMBELLACEAE				
	....AMPHORA		220	2	
	....CYMBELLA		650	5	
	...FRAGILARIACEAE				
	....SYNEDRA		220	2	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		430	4	
	...NITZSCHIACEAE				
	....NITZSCHIA		1,300	11	
		TOTALS	11,000	90	1.863=DIVERSITY

PHYL/DIV 0.491
CLASS 0.491
ORDER 1.403
FAMILY 2.145
GENERA 2.289

06306100 SQUIRREL CREEK NEAR DECKER, MT

LOCATION.--Lat 45°03'05", long 106°55'36", in NW¼NW¼ sec.14, T.9 S., R.39 E., Bighorn County, Hydrologic Unit 10090101, on left bank 0.4 mi (0.6 km) upstream from Powers Cormack ditch, 0.5 mi (0.8 km) northwest of C X Ranch, 4 mi (6 km) northwest of Decker, and 7 mi (11 km) upstream from mouth.

DRAINAGE AREA.--33.6 mi^2 (87.0 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1975 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,680 ft (1,122 m), from topographic map.

REMARKS.--Water-discharge records fair except those for winter period and May and June, which are poor. Two small diversions above station.

EXTREMES FOR CURRENT PERIOD.--September 1975: Maximum discharge during period, 1.4 ft^3/s (0.040 m^3/s) Sept. 25-30, gage height, 1.62 ft (0.494 m); minimum, 1.2 ft^3/s (0.034 m^3/s) Sept. 6, 7, 10, 11, 17, 18.
Water year 1976: Maximum discharge, 12.0 ft^3/s (0.34 m^3/s) May 4, 5, 6, 7, gage height, 2.33 ft (0.710 m); minimum daily, 0.07 ft^3/s (0.027 m^3/s) Sept. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, 1975

DAY	SEPT	DAY	SEPT	DAY	SEPT	DAY	SEPT	DAY	SEPT
1	1.3	8	1.3	15	1.3	22	1.3	29	1.4
2	1.3	9	1.4	16	1.3	23	1.3	30	1.4
3	1.3	10	1.2	17	1.2	24	1.3		
4	1.3	11	1.2	18	1.2	25	1.4		
5	1.3	12	1.3	19	1.3	26	1.4		
6	1.2	13	1.3	20	1.3	27	1.4		
7	1.2	14	1.3	21	1.3	28	1.4		

TOTAL	39.1
MEAN	1.30
MAX	1.4
MIN	1.2
AC-FT	78

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	2.0	1.6	1.6	2.8	1.0	5.8	10	4.3	2.9	.90	.10
2	1.4	2.1	1.6	1.6	2.5	1.0	5.9	10	4.1	2.8	1.6	.10
3	1.4	2.1	1.6	1.4	2.3	1.0	6.0	11	4.0	2.8	1.4	.09
4	1.3	2.1	1.7	1.6	1.3	1.0	6.0	12	4.0	2.8	1.3	.08
5	1.1	2.1	1.7	1.8	1.0	1.5	6.1	12	4.0	2.8	1.1	.07
6	1.1	2.1	1.7	2.0	1.2	1.5	6.0	12	4.0	2.7	1.1	.08
7	1.1	2.1	1.7	2.0	1.6	2.0	6.1	12	3.6	2.4	1.0	.08
8	1.2	2.1	1.7	2.0	2.0	2.3	6.1	11	2.8	2.4	.80	.14
9	1.6	1.6	1.6	2.0	2.2	3.3	6.3	10	2.5	2.3	.55	.31
10	1.9	1.6	1.4	2.0	2.4	4.3	6.3	10	2.5	2.2	.50	.35
11	1.6	1.7	1.4	2.0	2.8	4.1	6.4	9.6	2.5	2.0	.50	.31
12	1.6	1.1	1.4	2.0	3.0	4.5	6.4	9.6	2.5	1.8	.50	.28
13	1.6	1.9	1.2	2.0	3.9	6.0	6.5	9.6	2.5	1.8	.50	.28
14	1.6	2.0	1.2	2.0	3.7	7.0	6.5	9.6	2.5	2.0	.45	.35
15	1.6	2.0	1.0	2.0	3.4	7.5	6.7	9.6	3.0	1.6	.38	.35
16	1.6	2.0	1.0	2.0	2.9	7.0	6.7	8.5	5.0	1.5	.35	.35
17	1.6	2.0	1.0	2.0	3.5	6.5	6.8	7.0	4.8	1.4	.38	.31
18	1.7	1.9	1.2	2.0	3.1	6.0	8.0	7.0	4.6	1.5	.35	.24
19	1.7	1.4	1.2	2.1	2.1	5.8	8.7	7.7	4.4	1.5	.38	.24
20	1.6	.80	1.4	1.7	2.4	5.5	9.0	7.4	4.2	1.6	.38	.21
21	1.7	.60	1.4	2.5	1.9	5.5	9.0	6.4	4.0	1.3	.38	.28
22	1.9	.80	1.6	2.3	2.6	5.5	9.0	6.2	3.8	1.4	.31	.24
23	2.2	1.0	1.6	2.6	3.0	5.5	9.1	6.0	3.7	1.4	.21	.24
24	2.2	1.2	1.8	3.4	2.8	5.5	9.1	5.8	3.6	1.2	.14	.24
25	2.2	1.4	1.8	1.9	3.5	5.5	9.1	5.6	3.5	1.0	.14	.24
26	2.2	1.4	2.0	1.3	3.7	5.5	9.3	5.2	3.4	.95	.17	.24
27	2.2	1.4	2.0	1.4	3.6	5.5	9.3	5.0	3.3	.95	.21	.38
28	2.2	1.4	2.0	2.1	3.1	5.5	9.3	4.8	3.2	1.1	.28	.42
29	2.2	1.2	1.8	2.7	2.0	5.6	9.4	4.6	3.1	.90	.31	.45
30	2.0	1.0	1.8	3.7	---	5.7	9.4	4.5	3.0	.85	.28	.42
31	2.0	---	1.6	2.1	---	5.7	---	4.5	---	.80	.14	---
TOTAL	52.8	48.10	47.7	63.8	76.3	139.8	224.3	254.2	106.4	54.65	16.99	7.47
MEAN	1.70	1.60	1.54	2.06	2.63	4.51	7.48	8.20	3.55	1.76	.55	.25
MAX	2.2	2.1	2.0	3.7	3.9	7.5	9.4	12	5.0	2.9	1.6	.45
MIN	1.1	.60	1.0	1.3	1.0	1.0	5.8	4.5	2.5	.80	.14	.07
AC-FT	105	95	95	127	151	277	445	504	211	108	34	15

WTR YR 1976 TOTAL 1092.51 MEAN 2.99 MAX 12 MIN .07 AC-FT 2170

06306100 SQUIRREL CREEK NEAR DECKER, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1975 to September 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
06...	1230	1.1	1260	8.5	17.0	9.0	5	8.0	79	4.2	630	200
NOV												
10...	1230	1.5	1240	8.2	10.0	.5	2	11.0	87	1.2	630	190
DEC												
01...	1215	1.7	1340	8.0	4.0	.0	4	11.0	86	.2	660	200
JAN												
06...	1400	2.0	1220	8.0	-23.0	.0	4	11.2	88	1.0	630	200
FEB												
02...	1405	2.5	1110	8.0	12.0	.0	7	11.7	91	1.6	540	190
MAR												
01...	1245	.93	1240	8.3	-5.0	.0	7	11.1	87	1.3	610	220
APR												
05...	1200	6.1	990	8.0	19.0	8.5	10	11.6	114	.7	530	210
MAY												
03...	1300	11	915	8.3	19.0	12.0	60	10.2	109	1.1	490	190
JUN												
07...	1255	3.9	938	7.9	24.0	18.0	100	7.4	89	1.7	470	140
JUL												
06...	1215	2.7	970	8.0	25.0	19.0	40	7.4	91	1.2	490	170
AUG												
02...	1315	1.5	950	8.0	19.0	18.0	4	9.4	113	.8	490	160
30...	1210	.27	1120	8.5	25.0	16.0	20	8.2	95	.4	580	220

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
OCT											
06...	89	100	44	.8	10	527	0	320	3.1	.4	14
NOV											
10...	90	98	46	.8	8.1	539	0	300	4.0	.4	13
DEC											
01...	100	100	45	.8	7.1	557	0	320	6.1	.4	13
JAN											
06...	99	93	40	.7	7.0	525	0	300	4.0	.4	13
FEB											
02...	81	81	39	.7	6.8	401	8	280	7.4	.4	11
MAR											
01...	91	92	43	.8	6.5	472	0	300	1.6	.4	11
APR											
05...	86	77	26	.5	5.3	387	0	240	2.3	.3	8.0
MAY											
03...	88	66	22	.4	5.1	371	0	230	3.3	.4	8.9
JUN											
07...	68	73	29	.6	5.6	400	0	220	2.7	.3	9.3
JUL											
06...	67	79	27	.5	5.8	389	0	220	2.5	.5	11
AUG											
02...	71	77	29	.6	7.0	405	0	220	3.0	.3	10
30...	67	100	49	.9	8.3	415	13	310	4.0	.2	5.3

06306100 SQUIRREL CREEK NEAR DECKER, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT											
06...	841	1.14	2.50	.00	.01	.53	.54	.54	.07	140	180
NOV											
10...	826	1.12	3.35	.01	.02	.36	.38	.39	.01	90	60
DEC											
01...	866	1.18	3.97	.02	.03	.28	.31	.33	.00	110	30
JAN											
06...	815	1.11	4.40	.16	.04	.18	.22	.38	.02	80	20
FEB											
02...	713	.97	4.83	.17	.03	.58	.61	.78	.06	70	150
MAR											
01...	778	1.06	1.95	.15	.02	.27	.29	.44	.04	80	60
APR											
05...	636	.87	10.5	.13	.04	.52	.56	.69	.10	60	10
MAY											
03...	607	.83	18.0	.40	.00	.97	.97	1.4	.11	100	10
JUN											
07...	605	.82	6.37	.33	.01	.64	.65	.98	.13	70	90
JUL											
06...	605	.82	4.41	.57	.00	.50	.50	1.1	.08	100	10
AUG											
02...	617	.84	2.50	.35	.00	.60	.60	.95	.10	90	120
30...	762	1.04	.56	.09	.00	.37	.37	.46	.06	110	140

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BISMUTH (BI) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)
OCT											
06...	1230	410	--	2	--	--	10	--	--	10	--
NOV											
10...	1230	90	0	1	1	70	0	10	<10	<10	0
JAN											
06...	1400	80	--	0	--	--	10	--	--	0	--
APR											
05...	1200	20	--	0	--	--	0	--	--	10	--
JUL											
06...	1215	730	--	2	--	--	0	--	--	<10	--

DATE	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED GALLIUM (GA) (UG/L)	DIS-SOLVED GER-MANIUM (GE) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)
OCT										
06...	10	--	--	0	--	--	--	710	<100	--
NOV										
10...	66	2	<0	<10	2	<3	<10	580	<100	0
JAN										
06...	0	--	--	<10	--	--	--	360	<100	--
APR										
05...	10	--	--	<10	--	--	--	460	<100	--
JUL										
06...	0	--	--	<10	--	--	--	2500	<100	--

DATE	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)
OCT										
06...	70	--	120	--	.2	--	1	--	<50	--
NOV										
10...	70	60	130	110	.0	.0	2	3	<50	2
JAN										
06...	60	--	120	--	.0	--	2	--	<50	--
APR										
05...	50	--	60	--	.0	--	1	--	<50	--
JUL										
06...	50	--	120	--	.0	--	1	--	<50	--

06306100 SQUIRREL CREEK NEAR DECKER, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL SELENIUM (SE) (UG/L)	DIS-SOLVED SELENIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED STRONTIUM (SR) (UG/L)	DIS-SOLVED TIN (SN) (UG/L)	DIS-SOLVED TITANIUM (TI) (UG/L)	DIS-SOLVED VANADIUM (V) (UG/L)	DIS-SOLVED ZIRCONIUM (ZR) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
06...	0	--	--	--	--	--	--	--	10	--
NOV										
10...	0	1	<1	870	<10	<3	.8	<10	10	20
JAN										
06...	1	--	--	--	--	--	--	--	20	--
APR										
05...	0	--	--	--	--	--	--	--	10	--
JUL										
06...	0	--	--	--	--	--	--	--	0	--

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	DIS-SOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	DIS-SOLVED BERYLLIUM (BE) (UG/L)	DIS-SOLVED BISMUTH (BI) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DIS-SOLVED CADMIUM (CD) (UG/L)
OCT											
06...	1230	410	--	2	--	--	10	--	--	10	--
NOV											
10...	1230	90	0	1	1	70	0	10	<10	<10	0
JAN											
06...	1400	80	--	0	--	--	10	--	--	0	--
APR											
05...	1200	20	--	0	--	--	0	--	--	10	--
JUL											
06...	1215	730	--	2	--	--	0	--	--	<10	--

DATE	TOTAL CHROMIUM (CR) (UG/L)	DIS-SOLVED CHROMIUM (CR) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED GALLIUM (GA) (UG/L)	DIS-SOLVED GERMANIUM (GE) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)
OCT										
06...	10	--	--	0	--	--	--	710	<100	--
NOV										
10...	66	2	<6	<10	2	<3	<10	580	<100	0
JAN										
06...	0	--	--	<10	--	--	--	360	<100	--
APR										
05...	10	--	--	<10	--	--	--	460	<100	--
JUL										
06...	0	--	--	<10	--	--	--	2500	<100	--

DATE	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYBDENUM (MO) (UG/L)	DIS-SOLVED MOLYBDENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)
OCT										
06...	70	--	120	--	.2	--	1	--	<50	--
NOV										
10...	70	60	130	110	.0	.0	2	3	<50	2
JAN										
06...	60	--	120	--	.0	--	2	--	<50	--
APR										
05...	50	--	60	--	.0	--	1	--	<50	--
JUL										
06...	50	--	120	--	.0	--	1	--	<50	--

06306100 SQUIRREL CREEK NEAR DECKER, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED STRON-TIUM (SR) (UG/L)	DIS-SOLVED TIN (SN) (UG/L)	DIS-SOLVED TI-TANIUM (TI) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	DIS-SOLVED ZIR-CONIUM (ZR) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
06...	0	--	--	--	--	--	--	--	10	--
NOV										
10...	0	1	<1	870	<10	<3	.8	<10	10	20
JAN										
06...	1	--	--	--	--	--	--	--	20	--
APR										
05...	0	--	--	--	--	--	--	--	10	--
JUL										
06...	0	--	--	--	--	--	--	--	0	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
OCT					
06...	1230	9.0	1.1	29	.09
NOV					
10...	1230	.5	1.5	21	.09
DEC					
01...	1215	.0	1.7	6	.03
JAN					
06...	1400	.0	2.0	33	.18
FEB					
02...	1405	.0	2.5	25	.17
MAR					
01...	1245	.0	.93	61	.15
APR					
05...	1200	8.5	6.1	55	.91
MAY					
03...	1300	12.0	11	175	5.2
JUN					
07...	1255	18.0	3.9	303	3.2
JUL					
06...	1215	19.0	2.7	158	1.2
AUG					
02...	1315	18.0	1.5	94	.38
30...	1210	16.0	.27	115	.08

06306250 PRAIRIE DOG CREEK NEAR ACME, WY

LOCATION.--Lat 44°59'02", long 106°50'21", in NE¼SW¼SW¼ sec.23, T.58 N., R.83 W., Sheridan County, Hydrologic Unit 10090101, on right bank, 600 ft (183 m) upstream from county bridge, 0.9 mi (1.5 km) upstream from mouth, 2.8 mi (4.5 km) downstream from Coutant Creek, and 7.6 mi (12.2 km) northeast of Acme.

DRAINAGE AREA.--358 mi^2 (927 km^2).

PERIOD OF RECORD.--October 1970 to current year. Records for May 1965 to September 1970 in files of Office of Wyoming State Engineer.

GAGE.--Water-stage recorder. Altitude of gage is 3,450 ft (1,052 m), from topographic map.

REMARKS.--Records fair except those for winter period and August, which are poor. Diversions for irrigation of about 13,600 acres (55.0 km^2) above station, of which about 60 acres (243,000 m^2) lies below station. Flow supplemented by 3 transbasin diversions from North Piney Creek and South Piney Creek via Prairie Dog Creek ditch, Piney and Cruse ditch and Mead-Coffeen ditch.

AVERAGE DISCHARGE.--6 years, 43.8 ft^3/s (1.240 m^3/s), 31,730 acre-ft/yr (39.1 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 738 ft^3/s (20.9 m^3/s) Mar. 5, 1975, gage height, 6.01 ft (1.832 m), from rating curve extended above 190 ft^3/s (5.38 m^3/s) on basis of step-backwater computation; minimum daily, 6.3 ft^3/s (0.178 m^3/s) June 4, 5, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 146 ft^3/s (4.13 m^3/s) Feb. 16, gage height, 3.00 ft (0.914 m), minimum daily, 6.3 ft^3/s (0.178 m^3/s) June 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	26	28	20	37	48	40	87	13	47	23	35
2	15	26	32	18	36	39	40	77	12	33	24	41
3	15	26	32	16	33	35	40	64	8.8	22	23	38
4	15	26	40	16	31	30	39	55	6.3	21	26	35
5	15	26	59	18	30	33	38	50	6.3	21	26	27
6	14	26	43	20	29	38	37	48	6.5	18	24	22
7	16	26	35	21	28	44	39	47	7.0	14	24	22
8	15	25	40	22	32	47	38	43	8.6	13	25	24
9	16	24	40	24	40	51	38	40	9.9	11	25	32
10	15	23	43	25	45	52	38	38	9.1	19	26	35
11	16	24	38	26	55	57	37	36	8.6	18	28	38
12	16	25	30	27	64	50	36	34	7.6	14	30	41
13	17	26	25	28	76	42	35	38	8.8	9.4	20	45
14	18	28	20	28	93	48	35	44	11	11	17	48
15	20	26	18	28	106	53	34	43	19	11	19	51
16	25	25	17	28	116	53	35	47	47	13	18	54
17	27	24	16	28	100	49	38	50	43	13	24	55
18	25	23	19	28	94	55	57	43	82	14	24	51
19	25	21	24	28	78	63	56	40	83	16	25	47
20	25	20	30	28	55	66	47	37	70	18	26	48
21	27	19	35	28	43	56	42	36	72	18	26	51
22	29	21	37	28	45	59	40	37	65	19	26	50
23	30	23	37	28	55	51	40	80	67	17	26	48
24	32	27	37	26	65	47	38	51	68	19	26	46
25	28	30	37	25	69	46	37	43	66	16	26	47
26	28	28	36	24	78	45	37	32	63	16	26	51
27	30	25	35	24	72	43	42	27	62	16	26	58
28	34	23	33	24	74	43	66	20	59	16	26	64
29	32	23	31	25	63	42	83	18	56	19	26	59
30	29	25	30	30	---	41	89	17	52	22	27	57
31	27	---	25	35	---	40	---	15	---	23	28	---
TOTAL	691	740	1002	774	1742	1466	1310	1337	1097.5	554.4	766	1320
MEAN	22.3	24.7	32.3	25.0	60.1	47.3	43.7	43.1	36.6	17.9	24.7	44.0
MAX	34	30	59	35	116	66	89	87	83	47	30	64
MIN	14	19	16	16	28	30	34	15	6.3	9.4	17	22
AC-FT	1370	1470	1990	1540	3460	2910	2600	2650	2180	1100	1520	2620

CAL YR 1975 TOTAL 16609.0 MEAN 45.5 MAX 581 MIN 8.0 AC-FT 32940
WTR YR 1976 TOTAL 12799.9 MEAN 35.0 MAX 116 MIN 6.3 AC-FT 25390

06306250 PRAIRIE DOG CREEK NEAR ACME, WY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--August 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)
AUG												
11...	1100	27	1400	8.0	18.0	20	8.9	690	400	130	88	77

DATE	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)
AUG												
11...	1.3	8.2	350	0	287	550	2.5	.3	14	1040	1.41	75.8

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	DISSOLVED AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	DISSOLVED ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED KJEL. NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED PHOSPHORUS (P) (MG/L)
AUG											
11...	.22	.22	.00	.01	.49	.45	.49	.46	.71	.09	.03

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	DISSOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	DISSOLVED BORON (B) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)
AUG												
11...	1100	1500	0	2	1	0	0	130	<10	0	0	0

DATE	TOTAL COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	DISSOLVED LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED MERCURY (HG) (UG/L)
AUG												
11...	<10	1	2700	10	100	1	50	40	320	180	.0	.0

DATE	TOTAL MOLYBDENUM (MO) (UG/L)	DISSOLVED MOLYBDENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DISSOLVED NICKEL (NI) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)	TOTAL PHYTOPLANKTON (CELLS PER ML)	POTENTIAL ALGAL GROWTH BOTTLE TEST (MG/L)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
AUG												
11...	1	1	<50	2	1	1	20	0	740	.0	184	13

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT

LOCATION.--Lat 45°00'32", long 106°50'08", in NW¼NE¼ sec.33, T.9 S., R.40 E., Big Horn County, Hydrologic Unit 10090101, on left bank 1 mi (2 km) north of Wyoming-Montana State line, 1.5 mi (2.4 km) upstream from Badger Creek, and 1.4 mi (2.3 km) southeast of Decker.

DRAINAGE AREA.--1,477 mi^2 (3,825 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1960 to current year. Records published as "near Decker" May 1928 to September 1938, not equivalent owing to intervening drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 3,430 ft (1,050 m), from topographic map.

REMARKS.--Water-discharge records good except those for winter period, which are poor. Flow regulated by many small reservoirs in Wyoming, combined capacity, about 15,000 acre-ft (18.5 hm^3). Diversions for irrigation of about 64,300 acres (260 km^2) above station.

AVERAGE DISCHARGE.--16 years, 511 ft^3/s (14.47 m^3/s), 370,200 acre-ft/yr (456 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,480 ft^3/s (212 m^3/s) June 15, 1967, gage height, 10.86 ft (3.310 m); maximum gage height, 10.94 ft (3.335 m) Feb. 6, 1963 (backwater from ice jam); minimum discharge, 3.0 ft^3/s (0.11 m^3/s) Aug. 23, 1961, gage height, 1.83 ft (0.558 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft^3/s (56.6 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
June 6	2100	*2140	60.6	*5.83	1.777	June 23	2000	2020	57.2	5.81	1.771

Minimum discharge, 97 ft^3/s (2.74 m^3/s) Sept. 6, gage height, 2.62 ft (0.799 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	208	300	210	200	300	340	232	402	1620	915	169	143
2	203	291	250	170	305	310	236	386	1640	1010	262	147
3	190	288	350	200	300	280	236	390	1650	1030	446	132
4	189	288	450	220	290	350	222	414	1740	903	530	117
5	187	290	400	230	270	400	218	486	1790	813	390	109
6	187	284	350	250	230	430	218	535	1900	715	394	103
7	197	280	300	270	200	440	232	515	2030	660	346	112
8	203	276	330	280	250	460	262	505	1930	676	310	145
9	227	263	330	290	300	490	254	584	1840	594	278	183
10	225	237	330	300	340	500	250	666	1700	530	265	198
11	243	241	330	300	400	450	262	766	1520	486	258	196
12	255	259	280	300	450	400	254	880	1330	455	250	193
13	267	261	220	300	500	400	278	801	1180	455	254	213
14	283	297	170	300	600	450	318	874	1200	437	243	231
15	298	280	120	300	550	470	318	1110	1500	406	225	232
16	292	277	160	320	500	486	326	1110	1470	366	218	230
17	290	275	180	350	450	491	414	1030	1520	342	215	221
18	277	279	200	400	420	455	410	1120	1470	326	204	208
19	276	276	250	380	400	338	362	1220	1340	318	200	202
20	267	254	270	370	380	314	326	1360	1340	310	204	218
21	271	200	260	350	370	262	294	1470	1330	310	204	225
22	287	180	250	350	370	258	290	1540	1460	282	183	220
23	337	210	250	350	380	246	278	1580	1770	246	169	210
24	318	250	250	340	390	243	269	1570	1800	229	162	211
25	289	230	250	320	400	236	254	1600	1520	215	165	226
26	285	210	270	270	400	232	278	1610	1330	197	180	245
27	329	200	270	250	420	225	390	1470	1220	197	176	331
28	335	220	280	250	420	239	520	1430	1100	183	190	340
29	298	220	280	260	420	246	450	1520	1000	172	197	309
30	298	200	280	270	---	236	432	1730	915	172	190	288
31	302	---	270	280	---	229	---	1620	---	162	144	---
TOTAL	8113	7616	8390	9020	11005	10906	9083	32294	45165	14112	7621	6138
MEAN	262	254	271	291	379	352	303	1042	1506	455	246	205
MAX	337	300	450	400	600	500	520	1730	2030	1030	530	340
MIN	187	180	120	170	200	225	218	386	915	162	144	103
AC-FT	16090	15110	16640	17890	21830	21630	18020	64060	89580	27990	15120	12170

CAL YR 1975 TOTAL 277910 MEAN 761 MAX 5230 MIN 110 AC-FT 551200
WTR YR 1976 TOTAL 169463 MEAN 463 MAX 2030 MIN 103 AC-FT 336100

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT.--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1965 to September 1976 (discontinued).
WATER TEMPERATURES: October 1965 to September 1976 (discontinued).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE.--Maximum daily, 1,490 micromhos Aug. 12, 1966, Jan. 11, 1972; minimum daily, 192 micromhos June 7, 1976.
WATER TEMPERATURES: Maximum, 31.0°C July 16, 1966; minimum, 0.0°C on many days during winter period.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,010 micromhos Mar. 6; minimum daily, 192 micromhos June 7.
WATER TEMPERATURES: Maximum, 25.0°C July 11; minimum, 0.0°C on many days during November to March.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	FECAL COLIFORM (COL. PER 100 ML)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT											
04...	0800	204	800	8.1	12.0	--	8.5	3.1	B27	380	130
NOV											
08...	0830	278	820	8.2	4.0	3	10.9	2.1	B24	380	120
DEC											
06...	0800	A350	700	8.0	.5	4	10.8	2.3	140	350	100
JAN											
10...	0915	A300	850	7.7	1.0	7	10.1	1.5	68	400	140
FEB											
07...	0830	A200	820	7.9	.0	4	9.8	2.0	110	440	160
MAR											
08...	0830	A460	910	8.1	.0	3	11.8	2.6	21	440	160
APR											
10...	0845	258	880	8.2	10.0	20	10.8	2.4	B250	400	160
MAY											
08...	0800	495	600	8.1	12.0	15	8.9	4.0	82	260	80
JUN											
13...	0800	1190	260	7.9	13.0	20	8.3	5.1	B1200	120	30
JUL											
11...	0915	495	440	8.0	25.0	7	7.5	3.4	B1800	210	62
AUG											
07...	0900	282	650	7.9	21.5	20	7.0	3.9	120	290	85
11...	1300	200	670	8.5	23.5	10	9.5	--	--	310	95
SEP											
04...	0930	120	780	8.0	17.5	7	7.7	2.7	100	370	130

A Daily mean discharge.
B Results based on colony count outside the acceptable range (non-ideal colony count).

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)
OCT											
04...	74	46	39	.9	4.2	300	0	246	220	4.3	.4
NOV											
08...	70	49	35	.8	3.5	300	6	256	190	4.2	.4
DEC											
06...	67	44	34	.8	3.5	300	0	246	180	5.3	.4
JAN											
10...	82	47	36	.8	3.7	320	0	263	200	5.2	.4
FEB											
07...	84	56	45	.9	4.2	340	0	279	250	5.9	.5
MAR											
08...	84	55	44	.9	4.0	330	6	281	250	5.2	.5
APR											
10...	78	50	44	1.0	3.7	280	6	240	240	6.1	.4
MAY											
08...	54	31	27	.7	2.6	220	0	180	140	3.6	.3
JUN											
13...	26	12	7.6	.3	1.6	110	0	90	40	1.9	.2
JUL											
11...	44	25	20	.6	1.9	180	0	148	89	1.9	.3
AUG											
07...	58	37	26	.7	2.8	250	0	205	140	3.0	.4
11...	65	36	28	.7	3.4	251	6	216	150	2.6	.3
SEP											
04...	73	47	39	.9	4.9	290	0	238	210	3.6	.7

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	SUS-PENDED SOLIDS (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED AMMONIA NITRO-GEN (N) (MG/L)
OCT										
04...	4.3	540	.73	297	20	.05	.01	--	.00	--
NOV										
08...	4.7	506	.69	380	0	.00	.02	--	.00	--
DEC										
06...	7.4	489	.67	462	4	.23	.31	--	.11	--
JAN										
10...	10	544	.74	441	16	.50	.43	--	.15	--
FEB										
07...	9.2	626	.85	338	1	.27	.41	--	.10	--
MAR										
08...	7.8	614	.84	763	3	.20	.26	--	.05	--
APR										
10...	4.8	576	.78	401	24	.14	.03	--	.09	--
MAY										
08...	7.0	370	.50	495	30	.09	.03	--	.08	--
JUN										
13...	6.9	152	.21	488	27	.16	.07	--	.10	--
JUL										
11...	5.6	278	.38	372	24	.07	.22	--	.05	--
AUG										
07...	8.3	401	.55	305	32	.32	.11	--	.05	--
11...	6.6	422	.57	228	--	--	.06	.01	.00	.00
SEP										
04...	3.7	525	.71	170	2	.00	.11	--	.11	--

DATE	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	DIS-SOLVED ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	DIS-SOLVED KJEL. NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOL-VED PHOS-PHORUS (P) (MG/L)	TOTAL BORON (B) (UG/L)	TOTAL PHYTO-PLANK-TON (CELLS PER ML)	POTEN-TIAL ALGAL GROWTH BOTTLE TEST (MG/L)
OCT										
04...	.31	--	.31	--	.32	.02	--	210	610	--
NOV										
08...	.39	--	.39	--	.41	.02	--	--	2500	--
DEC										
06...	.28	--	.39	--	.70	.04	--	--	640	--
JAN										
10...	.66	--	.81	--	1.2	.14	--	90	1800	--
FEB										
07...	.66	--	.76	--	1.2	.07	--	160	280	--
MAR										
08...	.61	--	.66	--	.92	.05	--	170	760	--
APR										
10...	1.0	--	1.1	--	1.1	.09	--	110	3600	--
MAY										
08...	.68	--	.76	--	.79	.05	--	40	3800	--
JUN										
13...	.48	--	.58	--	.65	.06	--	40	1800	--
JUL										
11...	.56	--	.61	--	.83	.05	--	80	2000	--
AUG										
07...	.69	--	.74	--	.85	.07	--	110	2100	--
11...	.21	.58	.21	.58	.27	.05	.04	--	990	5.9
SEP										
04...	.51	--	.62	--	.73	.03	--	160	8800	--

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	SUSPENDED ALUMINUM (AL) (UG/L)	DISSOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	SUSPENDED ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	SUSPENDED BERYLLIUM (BE) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	DISSOLVED BORON (B) (UG/L)	TOTAL CADMIUM (CD) (UG/L)
OCT												
04...	0800	130	120	10	0	0	0	<10	0	<10	--	0
JAN												
10...	0915	360	350	10	0	0	0	10	0	10	--	<10
APR												
10...	0845	320	320	0	0	0	0	0	0	0	--	<10
JUL												
11...	0915	200	170	30	1	1	0	0	0	10	--	<10
AUG												
11...	1300	410	--	0	1	--	0	0	--	0	90	<10

DATE	SUSPENDED CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	SUSPENDED CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	SUSPENDED COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	SUSPENDED LEAD (PB) (UG/L)
OCT												
04...	0	0	10	0	10	10	8	2	140	0	0	0
JAN												
10...	<9	1	10	10	0	10	8	2	710	0	<100	<99
APR												
10...	<9	1	0	0	0	10	6	4	630	0	<100	<100
JUL												
11...	<10	0	0	0	0	<10	<8	2	300	30	<100	<98
AUG												
11...	--	1	0	--	0	<10	--	1	560	10	<100	--

DATE	DISSOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	SUSPENDED LITHIUM (LI) (UG/L)	DISSOLVED LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	SUSPENDED MANGANESE (MN) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	SUSPENDED MERCURY (HG) (UG/L)	DISSOLVED MERCURY (HG) (UG/L)	TOTAL MOLYBDENUM (MO) (UG/L)	SUSPENDED MOLYBDENUM (MO) (UG/L)
OCT												
04...	1	10	0	20	40	10	30	.0	.0	.0	2	1
JAN												
10...	1	20	0	20	80	50	30	.0	.0	.0	2	1
APR												
10...	0	30	10	20	110	30	80	.0	.0	.0	1	1
JUL												
11...	2	20	0	20	50	40	10	.0	.0	.1	0	0
AUG												
11...	0	20	--	20	60	--	20	.0	--	.0	0	--

DATE	DISSOLVED MOLYBDENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	SUSPENDED NICKEL (NI) (UG/L)	DISSOLVED NICKEL (NI) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	SUSPENDED SELENIUM (SE) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	DISSOLVED VANADIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	SUSPENDED ZINC (ZN) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT												
04...	1	<50	<48	2	0	0	0	1.1	10	0	10	4.8
JAN												
10...	1	<50	<48	2	1	0	1	.7	10	0	10	4.7
APR												
10...	0	<50	<44	6	1	0	1	1.1	110	100	10	4.7
JUL												
11...	0	<50	<50	0	0	0	0	.7	20	10	10	4.0
AUG												
11...	0	<50	--	3	1	--	1	--	10	--	0	--

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	836	826	913	846	791	901	928	832	231	389	739	804
2	854	821	883	934	772	950	925	823	212	368	694	777
3	839	815	829	928	772	971	910	783	218	321	598	766
4	857	806	786	931	795	995	905	740	208	322	504	787
5	863	811	768	926	920	975	902	679	197	347	603	819
6	813	791	800	899	935	1010	906	606	196	367	655	821
7	847	803	811	866	924	954	886	599	192	374	636	811
8	858	809	781	827	961	914	863	583	194	386	633	800
9	845	809	833	841	936	842	855	556	202	381	648	798
10	841	778	845	828	848	817	848	505	204	431	655	759
11	870	854	840	802	804	808	836	462	212	431	672	761
12	852	864	829	786	778	892	802	404	223	457	692	764
13	780	844	829	798	753	923	789	415	250	444	690	743
14	813	832	871	805	680	814	750	428	281	470	704	729
15	824	862	892	824	697	881	728	375	314	502	717	745
16	809	852	934	804	762	860	688	339	419	540	736	735
17	787	809	932	777	818	887	683	383	329	556	746	719
18	787	813	974	756	845	887	681	361	360	568	766	732
19	781	813	932	738	867	876	748	338	417	614	753	735
20	793	769	891	777	878	889	778	303	399	618	795	727
21	787	852	874	814	885	878	778	276	361	620	770	740
22	787	914	848	820	909	937	743	260	355	611	779	730
23	765	925	857	828	915	937	759	268	311	656	777	738
24	782	867	863	828	887	927	764	257	270	709	816	837
25	806	869	822	838	875	937	779	262	275	696	842	726
26	839	834	803	913	833	934	766	246	316	691	826	710
27	811	852	791	919	841	929	729	249	329	691	782	675
28	834	848	791	888	830	918	721	249	352	698	772	693
29	824	870	808	856	855	912	755	239	355	747	800	682
30	837	903	806	810	---	917	832	219	370	724	771	672
31	837	---	806	788	---	917	---	230	---	724	798	---
MONTH	821	837	847	839	840	909	801	428	285	531	722	751

YEAR MAX 1010 MIN 192 MEAN 717

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	4.0	1.0	0.0	1.0	1.0	5.0	8.0	13.0	16.0	22.0	17.0
2	9.0	5.0	2.0	0.0	1.0	0.0	5.0	10.0	13.0	19.0	21.0	17.0
3	10.0	5.0	1.0	0.0	1.0	0.0	4.0	10.0	12.0	19.0	19.0	18.0
4	11.0	5.0	1.0	0.0	0.0	0.0	6.0	12.0	13.0	18.0	19.0	18.0
5	11.0	4.0	0.0	0.0	0.0	0.0	7.0	11.0	12.0	19.0	20.0	17.0
6	11.0	5.0	0.0	1.0	0.0	1.0	7.0	11.0	14.0	20.0	19.0	17.0
7	11.0	4.0	1.0	1.0	0.0	1.0	6.0	10.0	14.0	20.0	21.0	16.0
8	10.0	4.0	1.0	0.0	1.0	1.0	8.0	11.0	15.0	19.0	21.0	15.0
9	7.0	3.0	1.0	0.0	1.0	1.0	9.0	11.0	15.0	20.0	20.0	13.0
10	8.0	2.0	1.0	1.0	1.0	1.0	8.0	12.0	14.0	20.0	20.0	13.0
11	9.0	2.0	0.0	1.0	2.0	1.0	8.0	13.0	15.0	21.0	19.0	14.0
12	9.0	1.0	0.0	0.0	2.0	0.0	12.0	12.0	15.0	21.0	20.0	13.0
13	9.0	2.0	1.0	0.0	1.0	0.0	11.0	11.0	14.0	21.0	20.0	15.0
14	8.0	2.0	0.0	0.0	1.0	1.0	10.0	12.0	13.0	20.0	20.0	14.0
15	6.0	3.0	0.0	1.0	1.0	1.0	11.0	12.0	9.0	21.0	20.0	15.0
16	7.0	4.0	0.0	1.0	1.0	1.0	11.0	9.0	10.0	21.0	20.0	15.0
17	7.0	4.0	0.0	1.0	1.0	1.0	10.0	10.0	9.0	22.0	19.0	16.0
18	8.0	4.0	1.0	2.0	1.0	1.0	9.0	10.0	9.0	22.0	20.0	15.0
19	8.0	3.0	1.0	1.0	1.0	3.0	9.0	11.0	10.0	21.0	20.0	16.0
20	8.0	0.0	1.0	0.0	1.0	3.0	8.0	14.0	11.0	22.0	19.0	16.0
21	9.0	0.0	0.0	0.0	1.0	2.0	9.0	13.0	15.0	22.0	19.0	15.0
22	9.0	0.0	1.0	1.0	1.0	3.0	9.0	13.0	14.0	21.0	20.0	16.0
23	6.0	0.0	1.0	1.0	1.0	5.0	10.0	12.0	15.0	22.0	20.0	14.0
24	5.0	0.0	0.0	0.0	1.0	4.0	9.0	12.0	13.0	22.0	19.0	15.0
25	4.0	1.0	1.0	0.0	1.0	5.0	9.0	13.0	13.0	21.0	18.0	14.0
26	4.0	0.0	1.0	0.0	1.0	4.0	10.0	13.0	14.0	22.0	18.0	13.0
27	5.0	1.0	1.0	1.0	1.0	5.0	9.0	12.0	13.0	22.0	15.0	14.0
28	4.0	1.0	1.0	1.0	1.0	5.0	8.0	12.0	13.0	21.0	16.0	11.0
29	4.0	0.0	1.0	1.0	0.0	4.0	7.0	13.0	14.0	22.0	17.0	10.0
30	5.0	0.0	1.0	1.0	---	3.0	8.0	12.0	16.0	21.0	16.0	12.0
31	5.0	---	0.0	1.0	---	4.0	---	13.0	---	22.0	17.0	---
MONTH	7.5	2.5	0.5	0.5	1.0	2.0	8.5	11.5	13.0	20.5	19.0	15.0

YEAR MAX 22.0 MIN 0.0 MEAN 8.5

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON
NOV. 8, 1975
0830 HOURS

	_ORGANISM__NAME_____	_COMMON__NAME_____
	CHLOROPHYTA	GREEN ALGAE
	.CHLOROPHYCEAE	
	..CHLOROCOCCALES	
	...SCENEDESMACEAE	
O	....SCENEDESMUS	
	..OEDOGONIALES	
	...OEDOGONIACEAE	
O	....OEDOGONIUM	
	..ULOTRICHALES	
	...CHAETOPHORACEAE	
O	....STIGEOCLONIUM	
	..ZYGNEMATALES	
	...ZYGNEMATACEAE	
O	....MOUGEOTIA	
	CHRYSOPHYTA	
	.BACILLARIORHYCEAE	DIATOMS
	..PENNALES	PENNATE
	...ACHNANTHACEAE	
O	....COCCONEIS	
O	....RHOICOSPHENIA	
	...CYMBELLACEAE	
O	....CYMBELLA	
E	....EPITHEMIA	
O	....RHORALODIA	
	...DIATOMACEAE	
O	....DIATOMA	
	...FRAGILARIACEAE	
O	....SYNEDRA	
	...GOMPHONEMATACEAE	
O	....GOMPHONEMA	
	...NAVICULACEAE	NAVICULOID
O	....CALONEIS	
O	....GYROSIGMA	
E	....NAVICULA	
	...NITZSCHIACEAE	
O	....NITZSCHIA	
	CYANOPHYTA	BLUE-GREEN ALGAE
	.MYXOPHYCEAE	
	..OSCILLATORIALES	FILAMENTOUS
	...OSCILLATORIACEAE	
O	....LYNGBYA	

NOTE: E - ESTIMATED DOMINANT ORGANISM; NOT ACTUALLY COUNTED
O - OBSERVED ORGANISM; NOT ACTUALLY COUNTED
SAMPLING METHOD: PLASTIC SLIDES, TIMED SAMPLING INTERVAL
ANALYSIS METHOD: SLIDE MOUNTING, 200-X MICROSCOPE

MAY 8, 1976
0800 HOURS

	_ORGANISM__NAME_____	_COMMON__NAME_____
	CHLOROPHYTA	GREEN ALGAE
	.CHLOROPHYCEAE	
	..CHLOROCOCCALES	
	...SCENEDESMACEAE	
O	....SCENEDESMUS	
	CHRYSORHYTA	
	.BACILLARIOPHYCEAE	DIATOMS
	..PENNALES	PENNATE
	...ACHNANTHACEAE	
O	....COCCONEIS	
O	....RHOICOSPHENIA	
	...CYMBELLACEAE	
O	....CYMBELLA	
O	....ERITHEMIA	
	...DIATOMACEAE	
O	....DIATOMA	
	...FRAGILARIACEAE	
O	....SYNEDRA	
	...GOMPHONEMATACEAE	
O	....GOMPHONEMA	
	...NAVICULACEAE	NAVICULOID
O	....CALONEIS	
O	....GYROSIGMA	
E	....NAVICULA	
	...NITZSCHIACEAE	
O	....NITZSCHIA	
	...SURIRELLACEAE	
O	....CYMATOPLEURA	
O	....SURIRELLA	
	CYANOPHYTA	BLUE-GREEN ALGAE
	.MYXOPHYCEAE	
	..OSCILLATORIALES	FILAMENTOUS
	...OSCILLATORIACEAE	
O	....LYNGBYA	

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON
AUG. 7, 1976
0900 HOURS

	ORGANISM NAME	COMMON NAME
	CHLOROPHYTA	GREEN ALGAE
	.CHLOROPHYCEAE	
	..CLADOPHORALES	
	...CLADOPHORACEAE	
O	....CLADOPHORA	
	..OEDOGONIALES	
	...OEDOGONIACEAE	
O	....OEDOGONIUM	
	..ULOTRICHALES	
	...CHAETOPHORACEAE	
O	....STIGEOCLONIUM	
	CHRYSOPHYTA	
	.BACILLARIOPHYCEAE	DIATOMS
	..CENTRALES	CENTRIC
	...COSCINODISCACEAE	
O	....MELOSIRA	
	..PENNALES	PENNATE
	...ACHNANTHACEAE	
F	....COCCONEIS	
	...CYMBELLACEAE	
O	....AMPHORA	
F	....EPITHEMIA	
O	....RHOPALODIA	
	...GOMPHONEMATACEAE	
O	....GOMPHONEMA	
	...NAVICULACEAE	NAVICULOID
O	....CALONEIS	
O	....GYROSIGMA	
O	....NAVICULA	
O	....NEIDIUM	
O	....PINNULARIA	
	...NITZSCHIACEAE	
O	....NITZSCHIA	
	...SURIRELLACEAE	
O	....CYMATOPLEURA	
	CYANOPHYTA	BLUE-GREEN ALGAE
	.MYXOPHYCEAE	
	..OSCILLATORIALES	FILAMENTOUS
	...OSCILLATORIACEAE	
O	....LYNGBYA	

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON
AUG. 11, 1976
1300 HOURS

	ORGANISM NAME	COMMON NAME
	CHLOROPHYTA	GREEN ALGAE
	.CHLOROPHYCEAE	
	..CHLOROCOCCALES	
	...SCENEDESMACEAE	
O	....SCENEDESMUS	
	..CLADOPHORALES	
	...CLADOPHORACEAE	
E	....CLADOPHORA	
	..ZYGNEMATALES	
	...DESMIDIACEAE	PLACODERM DESMIDS
O	....CLOSTERIUM	
	CHRYSOPHYTA	
	.BACILLARIOPHYCEAE	DIATOMS
	..CENTRALES	CENTRIC
	...COSCINODISCACEAE	
O	....CYCLOTELLA	
	..PENNALES	PENNATE
	...ACHNANTHACEAE	
O	....ACHNANTHES	
E	....COCCONEIS	
F	....RHOICOSPHENIA	
	...CYMBELLACEAE	
O	....CYMBELLA	
O	....EPITHEMIA	
O	....RHOPALODIA	
	...DIATOMACEAE	
O	....DIATOMA	
	...FRAGILARIACEAE	
O	....FRAGILARIA	
O	....SYNEDRA	
	...GOMPHONEMATACEAE	
O	....GOMPHONEMA	
	...NAVICULACEAE	NAVICULOID
O	....ANOMOEONEIS	
O	....CALONEIS	
O	....GYROSIGMA	
O	....NAVICULA	
	...NITZSCHIACEAE	
O	....HANTZSCHIA	
	...SURIRELLACEAE	
O	....SURIRELLA	
	CYANOPHYTA	BLUE-GREEN ALGAE
	.MYXOPHYCEAE	
	..CHROOCOCCALES	COCCOID
	...CHAMAESIPHONACEAE	
O	....CHAMAESIPHON	
	..OSCILLATORIALES	FILAMENTOUS
	...NOSTOCACEAE	
O	....ANABAENA	
	...OSCILLATORIACEAE	
O	....LYNGBYA	

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
OCT. 4, 1975
0800 HOURS
620 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
L	....CHLAMYDOMONAS			0	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		31	5	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		31	5	
	...CYMBELLACEAE				
	....EPITHEMIA		31	5	
	...DIATOMACEAE				
	....DIATOMA		31	5	
	...FRAGILARIACEAE				
L	....SYNEDRA			0	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		120	20	
	...NITZSCHIACEAE				
D	....NITZSCHIA		370	60	
		TOTALS	620	100	1.771=DIVERSITY

NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
ORDER 0.286
FAMILY 1.771
GENERA 1.771

NOV. 8, 1975
0830 HOURS
2.500 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...DOCYSTACEAE				
	....ANKISTRODESMUS		110	4	
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		110	4	
		TOTALS	220	8	1.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...CYMBELLACEAE				
	....CYMBELLA		110	4	
	....EPITHEMIA		220	9	
	...DIATOMACEAE				
D	....DIATOMA		780	31	
	...FRAGILARIACEAE				
	....SYNEDRA		56	2	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		500	20	
	...NITZSCHIACEAE				
D	....NITZSCHIA		610	24	
		TOTALS	2.300	90	2.190=DIVERSITY

PHYL/DIV 0.433
CLASS 0.433
ORDER 0.522
FAMILY 2.394
GENERA 2.517

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
DEC. 6, 1975
0800 HOURS
640 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...CHARACIACEAE				
	....SCHROEDERIA		29	5	
	..ZYGNEMATALES				
	...ZYGNEMATACEAE				
	....SPIROGYRA		87	14	
		TOTALS	120	19	0.811=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		29	5	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
L	....ACHNANTHES			0	
	...FRAGILARIACEAE				
L	....SYNEDRA			0	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		170	27	
	...NITZSCHIACEAE				
D	....NITZSCHIA		290	45	
	...SURIRELLACEAE				
	....SURIRELLA		29	5	
		TOTALS	520	82	1.463=DIVERSITY

PHYL/DIV 0.684
CLASS 0.684
ORDER 1.085
FAMILY 2.028
GENERA 2.028

JAN. 10, 1976
0915 HOURS
1,800 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		40	2	
		TOTALS	40	2	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...FRAGILARIACEAE				
L	....H.ARCUS			0	
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		40	2	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		40	2	
L	....RHOICOSPHENIA			0	
	...CYMBELLACEAE				
	....EPITHEMIA		40	2	
	...DIATOMACEAE				
	....DIATOMA		40	2	
	...FRAGILARIACEAE				
	....SYNEDRA		240	13	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		200	11	
	...NAVICULACEAE	NAVICULOID			
L	....GYROSIGMA			0	
D	....NAVICULA		440	24	
	...NITZSCHIACEAE				
	....NITZSCHIA		200	11	
	...SURIRELLACEAE				
L	....CYMATOPLEURA			0	
D	....SURIRELLA		560	30	
		TOTALS	1,800	97	2.601=DIVERSITY

PHYL/DIV 0.151
CLASS 0.151
ORDER 0.301
FAMILY 2.696
GENERA 2.696

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
FEB. 7, 1976
0830 HOURS
280 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		II	4	
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		22	8	
		TOTALS	33	12	0.918=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...CYMBELLACEAE				
L	....EPITHEMIA			0	
	...DIATOMACEAE				
	....DIATOMA		22	8	
	...FRAGILARIACEAE				
	....SYNEDRA		II	4	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		22	8	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		78	28	
	...NITZSCHIACEAE				
D	....NITZSCHIA		78	28	
	...SURIRELLACEAE				
	....SURIRELLA		22	8	
		TOTALS	230	84	2.235=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
L	....OSCILLATORIA			0	
	PYRRHOPHYTA	FIRE ALGAE			
	.DINOPHYCEAE	DINOFLAGELLATES			
	..GYMNODINIALES				
	...GYMNODINIACEAE				
	....GYMNODINIUM		11	4	
		TOTALS	II	4	0.000=DIVERSITY

PHYL/DIV 0.764
CLASS 0.764
ORDER 0.874
FAMILY 2.752
GENERA 2.752

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAR. 8, 1976
0830 HOURS
760 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
D	....CHLAMYDOMONAS		130	17	
		TOTALS	130	17	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...FRAGILARIACEAE				
	....H.ARCUS		32	4	
	...ACHNANTHACEAE				
	....COCCONEIS		32	4	
	...CYMBELLACEAE				
	....EPITHEMIA		32	4	
	...DIATOMACEAE				
L	....DIATOMA			0	
	...FRAGILARIACEAE				
L	....SYNEDRA			0	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		350	46	
	...NITZSCHIACEAE				
	....NITZSCHIA		95	12	
	...SURIRELLACEAE				
	....SURIRELLA		32	4	
		TOTALS	570	74	1.792=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.CRYPTOPHYCEAE	CRYPTOMONADS			
	..CRYPTOMONIDALES				
	...CRYPTOMONODACEAE				
	....CRYPTOMONAS		32	4	
		TOTALS	32	4	0.000=DIVERSITY
	PYRRHOPHYTA	FIRE ALGAE			
	.DINOPHYCEAE	DINOFLAGELLATES			
	..PERIDINIALES				
	...GLENODINIACEAE				
	....GLENODINIUM		32	4	
		TOTALS	32	4	0.000=DIVERSITY

PHYL/DIV	1.124
CLASS	1.124
ORDER	1.124
FAMILY	2.468
GENERA	2.468

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
APR. 10, 1976
0845 HOURS
3,600 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...SCENEDESMACEAE				
L	....SCENEDESMUS			0	
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
L	....CHLAMYDOMONAS			0	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		1,100	30	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
L	....COCCONEIS			0	
L	....RHOICOSPHENIA			0	
	...CYMBELLACEAE				
L	....CYMBELLA			0	
	....EPITHEMIA		71	2	
	...DIATOMACEAE				
L	....DIATOMA			0	
	...FRAGILARIACEAE				
	....SYNEDRA		140	4	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		71	2	
	...NAVICULACEAE	NAVICULOID			
L	....CALONEIS			0	
D	....NAVICULA		1,600	44	
	...NITZSCHIACEAE				
D	....NITZSCHIA		640	18	
	...SURIRELLACEAE				
L	....SURIRELLA			0	
		TOTALS	3,600	100	1.899=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
L	....EUGLENA			0	
	PYRRHOPHYTA	FIRE ALGAE			
	.DINOPHYCEAE	DINOFLAGELLATES			
	..PERIDINIALES				
	...PERIDINIACEAE				
L	....PERIDINIUM			0	

ORDER 0.881
FAMILY 1.899
GENERA 1.899

MAY 8, 1976
0800 HOURS
3,800 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		600	16	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		150	4	
	....COCCONEIS		230	6	
	...CYMBELLACEAE				
	....CYMBELLA		230	6	
	....EPITHEMIA		75	2	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		2,000	54	
L	....NEIDIUM			0	
	....STAURONEIS		75	2	
	...NITZSCHIACEAE				
	....NITZSCHIA		300	8	
	...SURIRELLACEAE				
	....SURIRELLA		75	2	
		TOTALS	3,800	100	2.206=DIVERSITY

ORDER 0.634
FAMILY 1.920
GENERA 2.206

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
JUNE 13, 1976
0800 HOURS
1,800 CELLS/ML

ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
CHRYSOPHYTA				
.BACILLARIOPHYCEAE	DIATOMS			
..PENNALES	PENNATE			
...ACHNANTHACEAE				
....COCCONEIS		84	5	
....RHOICOSPHENIA		84	5	
...CYMBELLACEAE				
D ....CYMBELLA		330	19	
...GOMPHONEMATACEAE				
....GOMPHONEMA		84	5	
...NAVICULACEAE	NAVICULOID			
D ....NAVICULA		1,000	57	
...NITZSCHIACEAE				
....NITZSCHIA		170	10	
	TOTALS	1,800	101	1.868=DIVERSITY

FAMILY 1.772
GENERA 1.868

JULY 11, 1976
0915 HOURS
2,000 CELLS/ML

ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
CHLOROPHYTA	GREEN ALGAE			
.CHLOROPHYCEAE				
..VOLVOCALES				
...CHLAMYDOMONADACEAE				
....CHLAMYDOMONAS		90	4	
	TOTALS	90	4	0.000=DIVERSITY
CHRYSOPHYTA				
.BACILLARIOPHYCEAE	DIATOMS			
..CENTRALES	CENTRIC			
...COSCINODISCACEAE				
....CYCLOTELLA		180	9	
..PENNALES	PENNATE			
...ACHNANTHACEAE				
....ACHNANTHES		180	9	
D ....COCCONEIS		450	22	
....RHOICOSPHENIA		90	4	
...CYMBELLACEAE				
....CYMBELLA		90	4	
...DIATOMACEAE				
....DIATOMA		45	2	
...FRAGILARIACEAE				
....FRAGILARIA		180	9	
...GOMPHONEMATACEAE				
....GOMPHONEMA		130	7	
...NAVICULACEAE	NAVICULOID			
....NAVICULA		270	13	
...NITZSCHIACEAE				
....NITZSCHIA		270	13	
...SURIRELLACEAE				
....SURIRELLA		45	2	
	TOTALS	1,900	94	3.171=DIVERSITY

PHYL/DIV 0.262
CLASS 0.262
ORDER 0.689
FAMILY 2.830
GENERA 3.292

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
AUG. 7, 1976
0900 HOURS
2,100 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		54	3	
	...SCENEDESMACEAE				
O	....SCENEDESMUS		640	31	
		TOTALS	700	34	0.391=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		320	15	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		110	5	
	....COCCONEIS		110	5	
	....RHOICOSPHENIA		110	5	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		110	5	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		320	15	
	...NITZSCHIACEAE				
D	....NITZSCHIA		320	15	
		TOTALS	1,400	65	2.603=DIVERSITY

PHYL/DIV	0.918
CLASS	0.918
ORDER	1.438
FAMILY	2.540
GENERA	2.784

AUG. 11, 1976
1300 HOURS
990 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		42	4	
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		21	2	
	..ZYGNEMATALES				
	...DESMIDIACEAE	PLACODERM DESMIDS			
L	....CLOSTERIUM			0	
		TOTALS	63	6	0.918=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		21	2	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		21	2	
	....COCCONEIS		85	9	
	...NAVICULACEAE	NAVICULOID			
	....GYROSIGMA		21	2	
	....NAVICULA		63	6	
	...NITZSCHIACEAE				
D	....NITZSCHIA		440	45	
	...SURIRELLACEAE				
	....SURIRELLA		21	2	
		TOTALS	680	68	1.719=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
D	....OSCILLATORIA		250	26	
		TOTALS	250	26	0.000=DIVERSITY

PHYL/DIV	1.134
CLASS	1.134
ORDER	1.329
FAMILY	2.217
GENERA	2.363

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
SEP. 4, 1976
0930 HOURS
8,800 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...MICRACTINIACEAE				
D	....MICRACTINIUM		1,300	15	
	...OOCYSTACEAE				
	....ANKISTRODESMUS		330	4	
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		250	3	
	...PHACOTACEAE				
	....PHACOTUS		83	1	
	..ZYGNEMATALES				
	...DESMIDIACEAE	PLACODERM DESMIDS			
	....CLOSTERIUM		83	1	
		TOTALS	2,100	24	1.574=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		4,300	49	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		250	3	
	....RHOICOSPHENIA		83	1	
	...CYMBELLACEAE				
	....CYMBELLA		83	1	
	...DIATOMACEAE				
	....DIATOMA		83	1	
	...FRAGILARIACEAE				
	....SYNEDRA		83	1	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		410	5	
	...NITZSCHIACEAE				
	....NITZSCHIA		1,200	14	
		TOTALS	6,600	75	1.603=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
	..CHRYSOMONADALES				
	...OCHROMONADACEAE				
	....OCHROMONAS		83	1	
		TOTALS	83	1	0.000=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
	....TRACHELOMONAS		83	1	
		TOTALS	83	1	0.000=DIVERSITY

PHYL/DIV 0.861
CLASS 0.935
ORDER 1.829
FAMILY 2.470
GENERA 2.500

06306800 DEER CREEK NEAR DECKER, MT

LOCATION.--Lat 45°03'19", long 106°42'09", in NW¼SW¼SW¼ sec.10, T.9 S., R.41 E., Big Horn County, Hydrologic Unit 10090101, at county road bridge, 6.1 mi (9.8 km) upstream from mouth and 8.5 mi (13.7 km) northeast of Decker.

DRAINAGE AREA.--38.3 mi² (99.2 km²).

PERIOD OF RECORD.--Water years 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
21...	1315	.06	6250	8.3	11.5	8.5	2	9.0	88	1.6	2200	1700
FEB												
17...	1400	.30	4200	7.9	8.0	.0	5	6.3	49	5.8	1600	1100
MAY												
04...	0900	.21	5200	8.4	10.0	11.0	10	8.0	82	.7	1900	1400

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
OCT											
21...	320	340	720	6.7	17	638	0	3200	27	.3	6.4
FEB											
17...	260	230	540	5.9	17	577	0	2200	17	.3	11
MAY											
04...	290	290	720	7.2	15	623	0	2900	16	.4	4.0

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)
OCT											
21...	4950	6.73	.80	.05	.09	1.1	1.2	1.3	.05	140	10
FEB											
17...	3560	4.84	2.88	.15	.08	2.1	2.2	2.4	.05	130	80
MAY											
04...	4540	6.17	2.57	.06	.01	.23	.24	.30	.03	130	30

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
OCT								
21...	1315	140	0	10	10	60	70	220

DATE	TOTAL LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL MOLYBDENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)
OCT								
21...	200	220	180	.0	5	200	0	40

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
OCT					
21...	1315	8.5	.06	13	.00
FEB					
17...	1400	.0	.30	67	.05
MAY					
04...	0900	11.0	.21	40	.02

06307500 TONGUE RIVER AT TONGUE RIVER DAM, NEAR DECKER, MT

LOCATION.--Lat 45°08'29", long 106°46'15", in SW¼SE¼SE¼ sec.12, T.8 S., R.40 E., Big Horn County, Hydrologic Unit 10090101, on left bank 0.5 mi (0.8 km) downstream from Tongue River Dam, 4 mi (6 km) upstream from Post Creek, 8 mi (13 km) northeast of Decker, 16 mi (26 km) southeast of Kirby, and at mile 162.3 (261.1 km).

DRAINAGE AREA.--1,770 mi^2 (4,580 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1939 to current year.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,344.40 ft (1,019.373 m) above mean sea level (levels by Bureau of Reclamation).

REMARKS.--Water-discharge records good except those for March to June, which are poor. Flow regulated by Tongue River Reservoir (see p.582) and many small reservoirs, combined capacity, about 15,000 acre-ft (18.5 hm^3). Diversions for irrigation of about 64,800 acres (262 hm^2) above station.

AVERAGE DISCHARGE.--37 years, 461 ft^3/s (13.06 m^3/s), 334,000 acre-ft/yr (412 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,340 ft^3/s (208 m^3/s) June 15 or 16, 1967, gage height, 8.20 ft (2.499 m), from floodmark; no flow part of each day Nov. 12, 13, 1969, when gates at dam were closed.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,900 ft^3/s (53.8 m^3/s) June 9, gage height, 4.18 ft (1.274 m); minimum daily, 15 ft^3/s (0.42 m^3/s) Nov. 5, 7, 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	202	16	189	252	236	232	315	487	974	638	497	332
2	202	18	189	252	236	234	315	487	1210	648	496	333
3	202	17	218	251	237	234	315	487	1210	656	497	337
4	202	22	272	251	237	234	315	547	1230	680	494	338
5	203	15	269	248	237	234	315	537	1260	806	497	338
6	202	16	269	248	237	234	322	537	1270	817	494	339
7	204	15	269	250	235	234	282	537	1530	835	492	340
8	206	21	269	247	235	237	335	537	1700	762	494	340
9	171	22	266	248	234	237	335	528	1800	595	492	344
10	141	17	266	245	234	237	335	524	1870	537	489	344
11	141	24	268	246	235	237	335	768	1730	542	491	343
12	140	24	267	245	236	237	335	762	1670	541	488	343
13	140	24	268	245	236	237	335	762	1420	541	487	330
14	140	25	263	245	237	240	335	756	1310	537	489	345
15	141	15	263	245	237	240	335	756	1310	530	486	345
16	141	20	263	243	237	240	335	750	1320	524	483	343
17	141	23	263	242	234	240	335	779	1320	515	486	342
18	141	23	260	242	234	240	335	785	1320	507	483	340
19	141	22	260	242	234	240	335	797	1330	500	482	342
20	142	22	260	242	234	243	335	803	1320	494	478	339
21	143	23	260	240	234	243	403	810	1330	484	480	338
22	143	24	260	240	234	243	403	810	1340	478	478	335
23	143	22	257	240	232	308	403	803	1340	474	475	333
24	143	21	257	240	232	308	487	822	1350	413	478	331
25	144	20	257	241	232	308	487	828	1360	389	477	332
26	145	19	257	237	232	311	487	828	1360	436	402	331
27	145	120	254	237	232	311	487	828	1370	505	334	328
28	145	189	254	237	232	311	487	835	1140	490	332	327
29	145	189	254	238	232	311	487	841	886	505	331	325
30	76	189	254	238	---	311	487	981	696	500	333	325
31	19	---	255	237	---	311	---	968	---	497	331	---
TOTAL	4734	1219	7930	7554	6804	8017	11152	22280	40276	17376	14246	10102
MEAN	153	40.6	256	244	235	259	372	719	1343	561	460	337
MAX	206	189	272	252	237	311	487	981	1870	835	497	345
MIN	19	15	189	237	232	232	282	487	696	389	331	325
AC-FT	9390	2420	15730	14980	13500	15900	22120	44190	79890	34470	28260	20040

CAL YR 1975 TOTAL 275029 MEAN 754 MAX 4930 MIN 15 AC-FT 545500
WTR YR 1976 TOTAL 151690 MEAN 414 MAX 1870 MIN 15 AC-FT 300900

06307500 TONGUE RIVER AT TONGUE RIVER DAM, NEAR DECKER, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1975 to September 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
07...	1000	214	800	8.1	12.0	12.0	8	8.8	92	1.5	360	140
NOV												
11...	0915	24	850	8.5	.5	3.0	3	12.0	101	1.0	390	150
DEC												
02...	0915	189	840	8.3	7.0	3.0	3	12.0	101	.8	390	150
JAN												
07...	1115	247	880	8.2	-20.0	2.0	2	12.4	101	.8	400	140
FEB												
03...	0930	236	875	8.3	-3.5	2.5	4	12.5	103	.6	400	130
MAR												
02...	1000	234	860	8.2	-13.0	2.0	3	12.0	98	1.8	410	140
APR												
06...	0915	319	945	8.2	17.5	4.5	3	11.8	103	1.7	440	180
MAY												
04...	1330	553	865	8.4	14.0	10.0	10	10.0	100	1.4	390	150
JUN												
08...	1030	1510	341	8.1	22.5	16.0	7	8.7	99	1.0	150	40
JUL												
07...	1015	835	330	7.9	25.0	17.0	10	8.3	97	.6	140	28
AUG												
03...	1000	497	384	8.0	21.0	22.0	7	8.0	103	.8	180	50
31...	1115	332	502	8.4	27.0	20.0	4	8.0	100	.4	240	87

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
OCT											
07...	67	47	39	.9	4.7	274	0	220	4.5	.3	4.8
NOV											
11...	74	50	40	.9	4.4	284	6	220	4.1	.3	1.3
DEC											
02...	78	48	37	.8	3.9	300	0	220	3.4	.3	1.7
JAN											
07...	78	51	38	.8	4.9	321	0	210	4.1	.3	3.7
FEB											
03...	79	50	39	.8	4.0	332	0	220	3.6	.3	5.8
MAR											
02...	80	51	38	.8	4.4	332	0	220	3.9	.3	7.3
APR											
06...	81	58	46	1.0	4.5	317	0	260	4.3	.3	6.8
MAY											
04...	73	50	45	1.0	4.5	273	7	240	4.6	.3	1.0
JUN											
08...	31	17	14	.5	1.9	131	0	63	1.7	.1	7.3
JUL											
07...	29	16	13	.5	1.7	134	0	61	1.1	.3	6.5
AUG											
03...	40	19	14	.5	2.0	156	0	73	1.6	.2	4.7
31...	45	30	23	.7	3.0	181	0	120	2.5	.3	10

06307500 TONGUE RIVER AT TONGUE RIVER DAM, NEAR DECKER, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT											
07...	523	.71	302	.08	.02	.44	.46	.54	.05	120	0
NOV											
11...	540	.73	350	.05	.02	.56	.58	.63	.01	110	0
DEC											
02...	540	.73	276	.00	.04	.34	.38	.38	.00	100	30
JAN											
07...	549	.75	366	.09	.10	.19	.29	.38	.02	90	980
FEB											
03...	565	.77	360	.24	.09	3.5	3.6	3.8	.02	100	10
MAR											
02...	569	.77	360	.28	.09	.42	.51	.79	.07	90	80
APR											
06...	617	.84	531	.18	.09	.57	.66	.84	.04	150	0
MAY											
04...	560	.76	836	.00	.00	.68	.68	.68	.04	150	60
JUN											
08...	201	.27	819	.09	.03	.30	.33	.42	.06	50	40
JUL											
07...	195	.27	440	.07	.02	.28	.30	.37	.04	40	40
AUG											
03...	232	.32	311	.20	.05	.31	.36	.56	.06	60	110
31...	323	.44	290	.01	.01	.42	.43	.44	.02	70	40

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BISMUTH (BI) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)
OCT											
07...	1000	290	--	1	--	--	10	--	--	10	--
NOV											
11...	0915	100	20	1	1	70	0	0	<7	<10	0
JAN											
07...	1115	60	--	0	--	--	0	--	--	0	--
APR											
06...	0915	60	--	0	--	--	0	--	--	<10	--
JUL											
07...	1015	320	--	1	--	--	0	--	--	<10	--

DATE	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED GALLIUM (GA) (UG/L)	DIS-SOLVED GER-MANIUM (GE) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)
OCT										
07...	10	--	--	0	--	--	--	310	<100	--
NOV										
11...	2	2	<7	<10	2	<4	<7	270	<100	1
JAN										
07...	0	--	--	<10	--	--	--	60	<100	--
APR										
06...	10	--	--	10	--	--	--	70	<100	--
JUL										
07...	10	--	--	<10	--	--	--	450	<100	--

DATE	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)
OCT										
07...	20	--	90	--	.1	--	2	--	50	--
NOV										
11...	30	20	60	10	.0	.0	2	2	<50	2
JAN										
07...	20	--	80	--	.0	--	2	--	<50	--
APR										
06...	40	--	70	--	.0	--	1	--	<50	--
JUL										
07...	10	--	50	--	.0	--	0	--	<50	--

06307500 TONGUE RIVER AT TONGUE RIVER DAM, NEAR DECKER, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED STRON-TIUM (SR) (UG/L)	DIS-SOLVED TIN (SN) (UG/L)	DIS-SOLVED TI-TANIUM (TI) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	DIS-SOLVED ZIR-CONIUM (ZR) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
07...	1	--	--	--	--	--	--	--	10	--
NOV										
11...	1	1	<1	520	<7	<7	1.6	<8	20	2
JAN										
07...	1	--	--	--	--	--	--	--	20	--
APR										
06...	0	--	--	--	--	--	--	--	0	--
JUL										
07...	0	--	--	--	--	--	--	--	0	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .062 MM
OCT						
07...	1000	12.0	214	16	9.2	--
NOV						
11...	0915	3.0	24	<1	1.4	--
DEC						
02...	0915	3.0	189	16	8.2	--
JAN						
07...	1115	2.0	247	35	23	--
FEB						
03...	0930	2.5	236	5	3.2	--
MAR						
02...	1000	2.0	234	15	9.5	--
APR						
06...	0915	4.5	319	11	9.5	--
MAY						
04...	1330	10.0	553	50	75	--
JUN						
08...	1030	16.0	1510	31	126	--
JUL						
07...	1015	17.0	835	19	43	--
AUG						
03...	1000	22.0	497	8	11	56
31...	1115	20.0	332	26	23	--

06307510 FOURMILE CREEK NEAR BIRNEY, MT

LOCATION.--Lat 45°12'28", long 106°42'52", in NE¼NW¼NE¼ sec.28, T.7 S., R.41 E., Rosebud County, Hydrologic Unit 10090101, on dirt road, 0.9 mi (1.4 km) upstream from mouth and 12.5 mi (20.1 km) southwest of Birney.

DRAINAGE AREA.--22.3 mi^2 (57.8 km^2).

PERIOD OF RECORD.--Water years 1975 to September 1976 (discontinued).

REMARKS.--Flow was not present during station visits.

06307530 BULL CREEK NEAR BIRNEY, MT

LOCATION.--Lat 45°17'17", long 106°35'55", in NE¼SW¼NW¼ sec.28, T.6 S., R.42 E., Rosebud County, Hydrologic Unit 10090101, 0.4 mi (0.6 km) upstream from mouth and 4.8 mi (7.7 km) southwest of Birney.

DRAINAGE AREA.--45.8 mi^2 (118.6 km^2).

PERIOD OF RECORD.--Water years 1975 to September 1976 (discontinued).

REMARKS.--Flow was not present during station visits.

06307600 HANGING WOMAN CREEK NEAR BIRNEY, MT

LOCATION.--Lat 45°17'57", long 106°30'28", in N½NW¼SE¼ sec.19, T.6 S., R.43 E., Rosebud County, Hydrologic Unit 10090101, on right bank 0.5 mi (0.8 km) downstream from bridge on Birney-Otter road, 1.6 mi (2.6 km) downstream from East Fork, 1.6 mi (2.6 km) south of Birney, and 3.3 mi (5.3 km) upstream from mouth.

DRAINAGE AREA.--470 mi^2 (1,217 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1973 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,150 ft (960 m), from topographic map.

REMARKS.--Water-discharge records fair except those for winter period, which are poor. Diversions for irrigation of about 1,240 acres (5.02 km^2) above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 986 ft^3/s (27.9 m^3/s) Mar. 4, 1975, gage height 9.77 ft (2.978 m); minimum, 0.08 ft^3/s (0.002 m^3/s) May 27, 28, 1976, gage height, 2.36 ft (0.719 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 30 ft^3/s (0.85 m^3/s) Feb. 15, no peak above base of 100 ft^3/s (2.83 m^3/s); maximum gage height, 3.44 ft (1.049 m) Feb. 14 (backwater from ice); minimum discharge, 0.08 ft^3/s (0.002 m^3/s) May 27, 28, gage height, 2.36 ft (0.719 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	3.2	3.2	3.0	5.0	14	3.2	5.3	.70	2.1	.80	.60
2	2.3	3.2	3.3	3.0	5.8	11	5.0	5.0	.54	2.1	.80	.60
3	2.5	3.0	3.2	2.5	5.0	8.0	5.0	4.7	.90	2.1	.90	.49
4	2.7	3.2	3.2	2.0	4.0	6.5	5.0	5.0	.70	2.1	.80	.54
5	2.1	3.2	3.2	1.5	3.0	6.0	5.0	5.8	.70	1.9	.80	.54
6	1.7	3.2	3.0	1.5	2.5	5.0	5.0	5.6	2.3	1.7	.80	.54
7	2.1	3.2	3.1	1.5	2.0	5.0	4.4	4.4	2.7	1.7	.65	.54
8	2.5	3.0	3.2	1.5	2.0	5.0	4.2	4.4	2.7	1.6	.65	.60
9	2.8	3.0	3.2	2.0	2.0	5.5	3.9	4.4	2.7	1.6	.65	.60
10	2.8	2.8	3.2	2.5	2.5	7.6	1.9	4.4	2.5	1.6	.60	.54
11	3.2	2.8	3.3	3.0	2.5	12	2.7	5.0	2.3	1.6	.60	.60
12	3.2	2.8	3.2	3.5	4.0	12	3.0	5.0	2.8	1.5	.60	.54
13	3.0	2.8	2.5	3.5	7.0	11	3.6	4.7	3.2	1.5	.60	.60
14	3.4	3.0	2.5	4.0	13	9.7	4.7	4.4	5.3	1.4	.60	.60
15	3.4	3.0	3.0	4.7	25	8.5	4.4	3.6	6.1	1.3	.49	.54
16	3.4	3.0	3.0	4.7	20	7.6	4.4	1.1	4.4	1.3	.54	.54
17	3.4	3.2	3.0	5.0	18	6.8	5.0	.70	5.8	1.3	.54	.54
18	3.4	3.2	3.2	4.4	18	5.3	5.0	.65	5.3	1.3	.54	.54
19	3.4	3.2	3.2	4.7	14	3.0	5.0	.60	5.0	1.3	.54	.60
20	3.4	2.8	3.2	5.3	14	2.8	4.7	.70	4.4	1.1	.54	.60
21	3.6	2.8	3.2	5.0	11	3.2	4.4	1.4	4.2	1.2	.60	.60
22	3.4	2.8	3.0	4.4	9.7	3.0	4.7	.90	4.2	1.1	.60	.60
23	3.4	2.8	3.0	4.4	9.7	3.0	4.4	.70	4.2	1.1	.54	.60
24	3.2	3.2	3.0	4.4	9.3	2.7	4.4	.70	3.0	.90	.54	.60
25	3.0	3.2	3.0	4.4	9.7	2.5	4.4	.39	3.6	.90	.60	.60
26	3.0	3.2	3.0	4.4	11	2.5	4.4	.49	3.4	.90	.65	.60
27	3.0	3.2	3.0	4.2	13	2.5	5.6	.34	3.2	.90	.65	.60
28	5.0	3.2	3.0	4.2	22	2.5	5.8	.60	2.8	.90	.65	.60
29	3.2	3.2	3.4	4.4	17	2.5	5.6	.80	2.8	.90	.65	.58
30	3.0	3.2	3.4	4.4	---	2.7	5.3	.49	2.5	.90	.65	.65
31	3.0	---	3.4	4.4	---	2.8	---	.54	---	.80	.65	---
TOTAL	93.6	91.6	96.3	112.4	281.7	182.2	134.1	82.80	95.54	42.60	19.82	17.32
MEAN	3.02	3.05	3.11	3.63	9.71	5.88	4.47	2.67	3.18	1.37	.64	.58
MAX	5.0	3.2	3.4	5.3	25	14	5.8	5.8	6.1	2.1	.90	.65
MIN	1.7	2.8	2.5	1.5	2.0	2.5	1.9	.34	.54	.80	.49	.49
AC-FT	186	182	191	223	559	361	266	164	190	84	39	34

CAL YR 1975 TOTAL 5129.91 MEAN 14.1 MAX 844 MIN .71 AC-FT 10180
WTR YR 1976 TOTAL 1249.98 MEAN 3.42 MAX 25 MIN .34 AC-FT 2480

06307600 HANGING WOMAN CREEK NEAR BIRNEY, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
22...	0930	3.2	2300	8.3	4.0	8.0	8	8.6	81	1.2	770	340
NOV												
11...	1030	2.8	2500	8.3	1.5	1.0	4	11.6	92	.7	770	270
DEC												
16...	1100	3.2	2550	8.1	-7.0	.0	5	11.6	89	.1	790	270
JAN												
20...	1045	5.5	2520	8.3	-2.5	.0	9	8.6	66	1.5	770	270
FEB												
18...	1200	15	1220	8.1	5.0	1.0	25	7.8	62	10	350	140
MAR												
16...	1030	6.9	2370	8.3	8.0	1.0	7	11.5	91	1.7	700	310
APR												
20...	1045	4.4	2650	8.1	12.5	9.0	7	10.0	98	2.5	810	310
MAY												
18...	1230	.99	2800	8.1	22.0	17.0	20	8.6	99	1.9	840	390
JUN												
24...	1000	3.5	2580	8.1	16.5	17.0	25	6.4	74	1.2	810	340
JUL												
20...	1000	1.0	2300	8.1	25.5	21.5	15	5.1	65	1.3	690	180
AUG												
17...	1030	.59	1980	8.2	26.0	20.0	15	6.9	85	.8	620	140
SEP												
29...	1630	.56	1500	8.3	24.0	14.5	10	9.5	102	2.2	520	62

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
OCT											
22...	110	120	310	4.9	15	526	0	970	12	1.0	16
NOV											
11...	110	120	310	4.9	15	605	0	920	12	1.1	17
DEC											
16...	120	120	300	4.6	15	640	0	880	12	1.1	19
JAN											
20...	110	120	310	4.9	14	609	0	940	13	.8	18
FEB											
18...	54	52	150	3.5	12	251	0	490	5.9	.3	8.2
MAR											
16...	100	110	290	4.8	12	481	0	940	10	.7	12
APR											
20...	110	130	340	5.2	15	614	0	980	2.5	.9	13
MAY											
18...	120	130	360	5.4	16	547	0	1100	13	.9	13
JUN											
24...	110	130	350	5.4	16	570	0	980	11	.9	14
JUL											
20...	94	110	310	5.1	15	623	0	870	11	1.2	18
AUG											
17...	85	100	260	4.5	14	589	0	650	11	1.3	17
SEP											
29...	74	81	180	3.4	12	556	0	420	7.8	1.3	21

06307600 HANGING WOMAN CREEK NEAR BIRNEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT											
22...	1810	2.46	15.7	.01	.00	.76	.76	.77	.02	290	40
NOV											
11...	1800	2.45	13.6	.15	.02	.45	.47	.62	.01	280	0
DEC											
16...	1780	2.42	15.6	.32	.02	.45	.47	.79	.00	260	20
JAN											
20...	1830	2.49	27.2	.40	.03	.77	.80	1.2	.02	270	30
FEB											
18...	896	1.22	36.3	.11	.03	1.5	1.5	1.6	.13	160	180
MAR											
16...	1710	2.33	31.9	.15	.09	1.0	1.1	1.3	.07	210	60
APR											
20...	1890	2.57	22.5	.00	.04	.85	.89	.89	.02	290	40
MAY											
18...	2020	2.75	5.40	.01	.01	.29	.30	.31	.06	300	20
JUN											
24...	1890	2.57	17.9	.00	.01	.57	.58	.58	.07	240	10
JUL											
20...	1740	2.37	4.70	.00	.00	.35	.35	.35	.06	280	20
AUG											
17...	1430	1.94	2.28	.00	.01	.48	.49	.49	.03	290	80
SEP											
29...	1070	1.46	1.62	.00	.03	.69	.72	.72	.04	260	70

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BISMUTH (BI) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)
OCT											
22...	0930	200	--	2	--	--	--	--	--	10	--
NOV											
11...	1030	90	0	1	1	40	0	0	<20	20	1
JAN											
20...	1045	150	--	1	--	--	10	--	--	<10	--
APR											
20...	1045	260	--	1	--	--	10	--	--	<10	--
JUL											
20...	1000	560	--	3	--	--	0	--	--	<10	--

DATE	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED GALLIUM (GA) (UG/L)	DIS-SOLVED GER-MANIUM (GE) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)
OCT										
22...	10	--	--	0	--	--	--	580	<100	--
NOV										
11...	14	6	<20	<10	2	<10	<20	660	<100	5
JAN										
20...	0	--	--	10	--	--	--	390	<100	--
APR										
20...	0	--	--	10	--	--	--	600	<100	--
JUL										
20...	0	--	--	10	--	--	--	1100	<100	--

06307600 HANGING WOMAN CREEK NEAR BIRNEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)
OCT										
22...	90	--	40	--	.0	--	4	--	0	--
NOV										
11...	100	90	40	20	.0	.0	3	5	50	3
JAN										
20...	100	--	80	--	.2	--	2	--	<50	--
APR										
20...	120	--	150	--	.0	--	4	--	50	--
JUL										
20...	120	--	130	--	.0	--	2	--	50	--

DATE	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED STRON-TIUM (SR) (UG/L)	DIS-SOLVED TIN (SN) (UG/L)	DIS-SOLVED TI-TANIUM (TI) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	DIS-SOLVED ZIR-CONIUM (ZR) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
22...	1	--	--	--	--	--	--	--	20	--
NOV										
11...	1	1	<2	1300	<20	<20	.7	<20	10	10
JAN										
20...	1	--	--	--	--	--	--	--	30	--
APR										
20...	1	--	--	--	--	--	--	--	60	--
JUL										
20...	1	--	--	--	--	--	--	--	10	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
OCT					
22...	0930	8.0	3.2	18	.16
NOV					
11...	1030	1.0	2.8	25	.19
DEC					
16...	1100	.0	3.2	12	.10
JAN					
20...	1045	.0	5.5	32	.48
FEB					
18...	1200	1.0	15	25	1.0
MAR					
16...	1030	1.0	6.9	21	.39
APR					
20...	1045	9.0	4.4	43	.51
MAY					
18...	1230	17.0	.99	43	.11
JUN					
24...	1000	17.0	3.5	117	1.1
JUL					
20...	1000	21.5	1.0	51	.14
AUG					
17...	1030	20.0	.59	27	.04
SEP					
29...	1630	14.5	.56	25	.04

06307610 TONGUE RIVER BELOW HANGING WOMAN CREEK, NEAR BIRNEY, MT

LOCATION.--Lat 45°20'19", long 106°31'28", in SW¼SE¼SE¼ sec.1, T.6 S., R.42 E., Rosebud County, Hydrologic Unit 10090102, at bridge on county road, 1.2 mi (1.9 km) northwest of Birney, 2.5 mi (4.0 km) downstream from Hanging Woman Creek, and at mile 148.8 (239.4 km).

DRAINAGE AREA.--2,533 mi² (6,560 km²).

PERIOD OF RECORD.--Water years 1974 to current year.

REMARKS.--Flow regulated by Tongue River Reservoir, diversions for irrigation, and many small reservoirs in Wyoming.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)
OCT										
08...	1000	216	800	8.2	4.0	10.0	6	8.8	87	.1
NOV										
11...	1330	46	1310	8.5	2.0	1.0	1	12.4	98	.4
DEC										
03...	1045	190	915	8.0	8.0	.0	1	12.2	93	.4
JAN										
08...	1145	250	970	8.0	-22.0	.0	1	12.4	95	.6
FEB										
04...	1000	240	990	8.5	-15.0	.0	3	12.4	95	.6
MAR										
03...	1030	240	1040	8.4	-15.0	.0	6	12.2	93	1.5
APR										
07...	1015	330	950	8.2	18.0	9.5	6	10.0	98	1.8
MAY										
05...	1000	560	830	8.6	14.0	12.0	25	9.4	97	3.1
JUN										
09...	1100	1520	379	8.0	25.0	20.0	25	7.3	90	1.4
JUL										
08...	1030	840	343	8.3	24.0	20.5	15	7.4	91	1.8
AUG										
04...	0950	500	405	8.4	22.0	22.0	8	8.3	105	1.5
SEP										
01...	1020	340	521	8.7	21.0	19.5	4	8.8	107	.9

DATE	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)
OCT										
08...	370	140	67	50	51	1.1	4.9	285	0	234
NOV										
11...	500	170	78	73	110	2.2	7.3	376	10	325
DEC										
03...	400	140	74	53	55	1.2	4.7	312	0	256
JAN										
08...	420	140	79	54	50	1.1	5.1	343	0	281
FEB										
04...	400	120	74	53	55	1.2	4.8	340	0	279
MAR										
03...	470	160	86	61	60	1.2	4.6	357	7	304
APR										
07...	440	170	77	59	54	1.1	5.0	327	0	268
MAY										
05...	380	140	68	50	52	1.2	5.1	283	0	232
JUN										
09...	170	55	34	21	20	.7	2.4	142	0	116
JUL										
08...	150	43	30	17	14	.5	1.8	124	0	102
AUG										
04...	190	54	40	22	19	.6	2.7	166	0	136
SEP										
01...	240	77	48	30	30	.8	3.2	193	5	167

06307610 TONGUE RIVER BELOW HANGING WOMAN CREEK, NEAR BIRNEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)
OCT									
08...	240	4.0	.3	4.3	562	.76	328	.01	.00
NOV									
11...	420	5.9	.5	6.2	896	1.22	111	.02	.02
DEC									
03...	250	3.6	.4	2.7	597	.81	306	.01	.00
JAN									
08...	240	5.0	.4	3.6	606	.82	409	.14	.03
FEB									
04...	250	4.8	.4	3.1	613	.83	397	.15	.03
MAR									
03...	280	7.2	.3	4.7	687	.93	445	.15	.00
APR									
07...	270	4.3	.3	4.7	636	.87	567	.08	.02
MAY									
05...	250	4.6	.3	.5	570	.78	862	.00	.00
JUN									
09...	76	2.0	.2	6.5	232	.32	952	.06	.03
JUL									
08...	71	1.4	.2	5.1	202	.27	458	.01	.00
AUG									
04...	88	1.2	.2	3.7	259	.35	350	.04	.02
SEP									
01...	130	2.5	.3	5.2	350	.48	321	.04	.01

DATE	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	DIS-SOL-VED ORGANIC CARBON (C) (MG/L)	SUS-PENDED ORGANIC CARBON (C) (MG/L)
OCT									
08...	.42	.42	.43	.21	120	10	--	4.3	.4
NOV									
11...	.28	.30	.32	.00	150	0	--	--	--
DEC									
03...	.39	.39	.40	.00	110	20	--	--	--
JAN									
08...	.38	.41	.55	.00	90	0	4.2	4.0	.1
FEB									
04...	.38	.41	.56	.00	100	20	--	--	--
MAR									
03...	.66	.66	.81	.01	110	20	--	--	--
APR									
07...	.57	.59	.67	.02	140	10	--	5.8	.9
MAY									
05...	.88	.88	.88	.08	140	20	--	--	--
JUN									
09...	.62	.65	.71	.12	50	70	--	--	--
JUL									
08...	.36	.36	.37	.01	60	40	--	5.8	2.3
AUG									
04...	.49	.51	.55	.03	60	150	--	--	--
SEP									
01...	.26	.27	.31	.06	80	120	--	--	--

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)
OCT											
08...	1000	320	10	2	2	10	10	10	0	10	10
JAN											
08...	1145	60	20	0	0	0	0	<10	1	0	0
APR											
07...	1015	190	10	0	0	0	0	<10	0	10	0
JUL											
08...	1030	600	0	1	1	0	10	<10	1	0	10

06307610 TONGUE RIVER BELOW HANGING WOMAN CREEK, NEAR BIRNEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)
OCT										
08...	0	4	280	<100	1	40	30	20	10	.1
JAN										
08...	10	4	20	<100	3	<0	30	10	10	.0
APR										
07...	10	2	360	<100	1	40	20	80	40	.0
JUL										
08...	10	2	980	<100	7	10	10	60	10	.0

DATE	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
08...	.0	2	2	<50	2	1	0	2.2	10	20
JAN										
08...	.1	2	2	<50	3	1	1	1.2	20	10
APR										
07...	.0	1	2	<50	4	0	0	1.3	40	10
JUL										
08...	.0	0	0	<50	2	1	0	2.6	30	0

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .062 MM
OCT						
08...	1000	10.0	216	14	8.2	--
NOV						
11...	1330	1.0	46	19	2.4	--
DEC						
03...	1045	.0	190	2	1.0	--
JAN						
08...	1145	.0	250	<4	16	--
FEB						
04...	1000	.0	240	5	3.2	--
MAR						
03...	1030	.0	240	14	9.1	--
APR						
07...	1015	9.5	330	<4	21	--
MAY						
05...	1000	12.0	560	81	122	--
JUN						
09...	1100	20.0	1520	150	616	--
JUL						
08...	1030	20.5	840	30	68	--
AUG						
04...	0950	22.0	500	<0	27	82
SEP						
01...	1020	19.5	340	<3	21	--

06307610 TONGUE RIVER BELOW HANGING WOMAN CREEK, NEAR BIRNEY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON

Date	Length of exposure (days)	Biomass (g/m^2) Dry weight	Ash weight	Chlorophyll a (mg/m^2)	Chlorophyll b (mg/m^2)	Biomass pigment ratio	Sampling method
Nov 11	34	.200	.100	.400	.000	200	Polyethylene strip
May 0	28	44.6	41.2	7.04	.040	490	

PHYTOPLANKTON

OCT. 8, 1975
1000 HOURS
1,700 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...CHARACIACEAE				
L	....SCHROEDERIA			0	
	...HYDRODICTYACEAE				
L	....PEDIASTRUM			0	
	...OOCYSTACEAE				
	....ANKISTRODESMUS		41	2	
	....OOCYSTIS		41	2	
		TOTALS	81	4	1.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		530	32	
L	....MELOSIRA			0	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		41	2	
	....COCCONEIS		160	10	
L	....RHOICOSPHENIA			0	
	...CYMBELLACEAE				
L	....CYMBELLA			0	
	...DIATOMACEAE				
	....DIATOMA		81	5	
	...FRAGILARIACEAE				
	....FRAGILARIA		41	2	
L	....SYNEDRA			0	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		81	5	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		41	2	
L	....NEIDIUM			0	
	...NITZSCHIACEAE				
D	....NITZSCHIA		610	37	
		TOTALS	1,600	95	2.242=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...NOSTOCACEAE				
L	....ANABAENA			0	
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
L	....TRACHELOMONAS			0	

NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:

PHYL/DIV	0.281
CLASS	0.281
ORDER	1.155
FAMILY	2.325
GENERA	2.462

06307610 TONGUE RIVER BELOW HANGING WOMAN CREEK, NEAR BIRNEY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
NOV. 11, 1975
1330 HOURS
680 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...SCENEDESMACEAE				
D	....SCENEDESMUS		120	17	
		TOTALS	120	17	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		59	9	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		30	4	
	...DIATOMACEAE				
	....DIATOMA		30	4	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		30	4	
	...NITZSCHIACEAE				
D	....NITZSCHIA		420	61	
		TOTALS	560	82	1.337=DIVERSITY

PHYL/DIV 0.667
CLASS 0.667
ORDER 1.068
FAMILY 1.771
GENERA 1.771

DEC. 3,1975
1045 HOURS
1,100 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		60	6	
		TOTALS	60	6	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		420	39	
	....STEPHANODISCUS		60	6	
	..PENNALES	PENNATE			
	...CYMBELLACEAE				
L	....CYMBELLA			0	
	...DIATOMACEAE				
	....DIATOMA		60	6	
	...FRAGILARIACEAE				
	....ASTERIONELLA		60	6	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		60	6	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		60	6	
	...NITZSCHIACEAE				
D	....NITZSCHIA		300	28	
		TOTALS	1,000	97	2.249=DIVERSITY

PHYL/DIV 0.310
CLASS 0.310
ORDER 1.252
FAMILY 2.192
GENERA 2.433

06307610 TONGUE RIVER BELOW HANGING WOMAN CREEK, NEAR BIRNEY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
JAN. 8, 1976
1145 HOURS
260 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...HYDRODICTYACEAE				
L	....PEDIASTRUM			0	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		35	13	
	..PENNALES	PENNATE			
	...CYMBELLACEAE				
L	....CYMBELLA			0	
	...DIATOMACEAE				
	....DIATOMA		35	13	
	...FRAGILARIACEAE				
L	....FRAGILARIA			0	
D	....SYNEDRA		110	40	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		18	7	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		18	7	
	...NITZSCHIACEAE				
	....NITZSCHIA		35	13	
		TOTALS	250	93	2.271=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
L	....LYNGBYA			0	
	PYRRHOPHYTA	FIRE ALGAE			
	.DINOPHYCEAE	DINOFLAGELLATES			
	..PERIDINIALES				
	...GLENODINIACEAE				
	....GLENODINIUM		18	7	
		TOTALS	18	7	0.000=DIVERSITY

PHYL/DIV 0.353
CLASS 0.353
ORDER 0.906
FAMILY 2.473
GENERA 2.473

FEB. 4, 1976
1000 HOURS
500 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....OOCYSTIS		45	9	
	..TETRASPORALES				
	...PALMELLACEAE				
	....SPHAEROCYSTIS		11	2	
		TOTALS	56	11	0.722=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		23	5	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
L	....COCCONEIS			0	
	...CYMBELLACEAE				
L	....CYMBELLA			0	
	...DIATOMACEAE				
	....DIATOMA		11	2	
	...FRAGILARIACEAE				
L	....ASTERIONELLA			0	
	....FRAGILARIA		56	11	
D	....SYNEDRA		210	43	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		56	11	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		23	5	
	...NITZSCHIACEAE				
	....NITZSCHIA		34	7	
		TOTALS	420	84	2.164=DIVERSITY

06307610 TONGUE RIVER BELOW HANGING WOMAN CREEK, NEAR BIRNEY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

FEB 4, 1976--CONTINUED

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
L	....PHACUS			0	
	PYRRHOPHYTA	FIRE ALGAE			
	.DINOPHYCEAE	DINOFLAGELLATES			
	..PERIDINIALES				
	...GONYAULACACEAE				
	....GONYAULAX		23	5	
		TOTALS	23	5	0.000=DIVERSITY

PHYL/DIV 0.769
CLASS 0.769
ORDER 1.107
FAMILY 2.268
GENERA 2.671

MAR. 3, 1976
1030 HOURS
2,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		110	6	
		TOTALS	110	6	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
O	....CYCLOTELLA		670	33	
	....STEPHANODISCUS		55	3	
	..PENNALES	PENNATE			
	...CYMBELLACEAE				
	....CYMBELLA		55	3	
	...DIATOMACEAE				
D	....DIATOMA		390	19	
	...FRAGILARIACEAE				
O	....SYNEDRA		610	31	
		TOTALS	1,800	89	1.852=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
	..CHRYSOMONADALES				
	...OCHROMONADACEAE				
	....OCHROMONAS		110	6	
		TOTALS	110	6	0.000=DIVERSITY

PHYL/DIV 0.310
CLASS 0.614
ORDER 1.481
FAMILY 2.120
GENERA 2.261

APR. 7, 1976
1015 HOURS
3,100 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....CHLORELLA		140	4	
	....CLOSTERIOPSIS		56	2	
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		84	3	
		TOTALS	280	9	1.485=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		56	2	
	....COCCONEIS		28	1	
	...CYMBELLACEAE				
O	....CYMBELLA		670	21	
	...DIATOMACEAE				
	....DIATOMA		110	4	

06307610 TONGUE RIVER BELOW HANGING WOMAN CREEK, NEAR BIRNEY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

APR. 7, 1976--Continued

	...FRAGILAPIACEAE				
	....ASTERIONELLA		56	2	
	....FRAGILARIA		56	2	
O	....SYNEORA		1,100	36	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		220	7	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		84	3	
	...NITZSCHIACEAE				
	....NITZSCHIA		110	4	
	...TABELLAPIACEAE				
	....TABELLAPIA		220	7	
		TOTALS	2,700	89	2.557=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
	....SPIRULINA		56	2	
		TOTALS	56	2	0.000=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.CRYPTOPHYCEAE	CRYPTOMONADS			
	..CRYPTOMONIDALES				
	...CRYPTOMONODACEAE				
	....CRYPTOMONAS		28	1	
		TOTALS	28	1	0.000=DIVERSITY
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
	....TRACHELOMONAS		28	1	
		TOTALS	28	1	0.000=DIVERSITY

PHYL/DIV 0.687
CLASS 0.705
ORDER 0.784
FAMILY 2.788
GENERA 3.075

MAY 5, 1976
1000 HOURS
8,400 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		370	4	
		TOTALS	370	4	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		4,100	49	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		370	4	
L	....COCCONEIS			0	
	...CYMBELLACEAE				
	....CYMBELLA		990	12	
	...FRAGILARIACEAE				
	....ASTERIONELLA		250	3	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		370	4	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		250	3	
	...NITZSCHIACEAE				
	....NITZSCHIA		1,100	13	
		TOTALS	7,400	88	2.032=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..CHROOCOCCALES	COCCOID			
	...CHROOCOCCACEAE				
	....ANACYSTIS		620	7	
		TOTALS	620	7	0.000=DIVERSITY

PHYL/DIV 0.635
CLASS 0.635
ORDER 1.511
FAMILY 2.428
GENERA 2.428

06307610 TONGUE RIVER BELOW HANGING WOMAN CREEK, NEAR BIRNEY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
JUNE 9, 1976
1100 HOURS
4,200 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
L	....OOCYSTIS			0	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		140	3	
	....MELOSIRA		68	2	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		270	6	
	....COCCONEIS		270	6	
	....RHOICOSPHENIA		140	3	
	...CYMBELLACEAE				
D	....CYMBELLA		610	15	
	...DIATOMACEAE				
	....DIATOMA		200	5	
	...FRAGILARIACEAE				
L	....ASTERIONELLA			0	
	....FRAGILARIA		340	8	
	....SYNEDRA		140	3	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		680	16	
	...NAVICULACEAE	NAVICULOID			
	....CALONEIS		68	2	
	....NAVICULA		340	8	
	...NITZSCHIACEAE				
D	....NITZSCHIA		880	21	
	...SURIRELLACEAE				
	....CYMATOPLEURA		68	2	
		TOTALS	4,200	100	3.376=DIVERSITY

ORDER 0.280
FAMILY 2.926
GENERA 3.376

06307610 TONGUE RIVER BELOW HANGING WOMAN CREEK, NEAR BIRNEY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
JULY 8, 1976
1030 HOURS
370 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....OOCYSTIS		8	2	
	..ZYGNEMATALES				
	...DESMIDIACEAE	PLACODERM DESMIDS			
	....STAURASTRUM		2	1	
		TOTALS	10	3	0.722=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		8	2	
	....MELOSIRA		18	5	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		6	2	
	....COCCONEIS		14	4	
	....RHOICOSPHENIA		2	1	
	...CYMBELLACEAE				
	....AMPHORA		4	1	
	....CYMBELLA		2	1	
	....EPITHEMIA		2	1	
	...DIATOMACEAE				
	....DIATOMA		6	2	
	...FRAGILARIACEAE				
	....ASTERIONELLA		16	4	
D	....FRAGILARIA		120	33	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		22	6	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		10	3	
	...NITZSCHIACEAE				
	....NITZSCHIA		6	2	
		TOTALS	240	67	2.641=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...NOSTOCACEAE				
	....APHANIZOMENON		24	7	
	...OSCILLATORIACEAE				
D	....OSCILLATORIA		92	25	
		TOTALS	120	32	0.742=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
	....EUGLENA		2	1	
		TOTALS	2	1	0.000=DIVERSITY
	PYRRHOPHYTA	FIRE ALGAE			
	.DINOPHYCEAE	DINOFLAGELLATES			
	..PERIDINIALES				
	...GLENODINIACEAE				
	....GLENODINIUM		2	1	
		TOTALS	2	1	0.000=DIVERSITY

PHYL/DIV 1.155
CLASS 1.155
ORDER 1.499
FAMILY 2.753
GENERA 3.119

06307610 TONGUE RIVER BELOW HANGING WOMAN CREEK, NEAR BIRNEY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
AUG. 4, 1976
0950 HOURS
3,700 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...HYDROODICTYACEAE				
L	....PEDIASTRUM			0	
	...OOCYSTACEAE				
	....ANKISTRODESMUS		19	1	
	....OOCYSTIS		19	1	
	..TETRASPORALES				
	...PALMELLACEAE				
D	....SPHAEROCYSTIS		1,100	30	
		TOTALS	1,100	32	0.247=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		19	1	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		250	7	
	....COCCONEIS		310	8	
	....RHOICOSPHENIA		140	4	
	...CYMBELLACEAE				
	....CYMBELLA		78	2	
	...DIATOMACEAE				
	....DIATOMA		19	1	
	...FRAGILARIACEAE				
	....FRAGILARIA		78	2	
	....SYNEDRA		19	1	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		160	4	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		230	6	
	...NITZSCHIACEAE				
	....NITZSCHIA		78	2	
		TOTALS	1,400	38	3.012=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
	..CHRYSOMONADALES				
	...OCHROMONADACEAE				
	....OCHROMONAS		19	1	
		TOTALS	19	1	0.000=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..CHROOCOCCALES	COCCOID			
	...CHROOCOCCACEAE				
	....AGMENELLUM		160	4	
D	....ANACYSTIS		580	16	
	..OSCILLATORIALES	FILAMENTOUS			
	...NOSTOCACEAE				
	....APHANIZOMENON		410	11	
		TOTALS	1,100	31	1.417=DIVERSITY

PHYL/DIV 1.578
CLASS 1.618
ORDER 2.016
FAMILY 2.797
GENERA 3.261

06307610 TONGUE RIVER BELOW HANGING WOMAN CREEK, NEAR BIRNEY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
SEP. 1, 1976
1020 HOURS
980 CELLS/ML

ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
CHLOROPHYTA	GREEN ALGAE			
.CHLOROPHYCEAE				
..CHLOROCOCCALES				
...OOCYSTACEAE				
....CLOSTERIOPSIS		20	2	
D ....OOCYSTIS		320	33	
..VOLVOCALES				
...PHACOTACEAE				
....PHACOTUS		60	6	
	TOTALS	400	41	0.884=DIVERSITY
CHRYSOPHYTA				
.BACILLARIOPHYCEAE	DIATOMS			
..CENTRALES	CENTRIC			
...COSCINODISCACEAE				
....CYCLOTELLA		20	2	
..PENNALES	PENNATE			
...ACHNANTHACEAE				
....COCCONEIS		120	12	
...CYMBELLACEAE				
....CYMBELLA		60	6	
....EPITHEMIA		20	2	
...NAVICULACEAE	NAVICULOID			
....NAVICULA		100	10	
...NITZSCHIACEAE				
....NITZSCHIA		40	4	
...SURIRELLACEAE				
....SURIRELLA		20	2	
...TABELLARIACEAE				
....TABELLARIA		20	2	
	TOTALS	400	40	2.628=DIVERSITY
CYANOPHYTA	BLUE-GREEN ALGAE			
.MYXOPHYCEAE				
..CHROOCOCCALES	COCCOID			
...CHROOCOCCACEAE				
....ANACYSTIS		140	14	
	TOTALS	140	14	0.000=DIVERSITY
EUGLENOPHYTA	EUGLENOIDS			
.CRYPTOPHYCEAE	CRYPTOMONADS			
..CRYPTOMONIOALES				
...CRYPTOCHRYSIOACEAE				
....CHROOMONAS		20	2	
	TOTALS	20	2	0.000=DIVERSITY
.EUGLENOPHYCEAE				
..EUGLENALES				
...EUGLENACEAE				
....TRACHELOMONAS		20	2	
	TOTALS	20	2	0.000=DIVERSITY

PHYL/DIV 1.645
CLASS 1.686
ORDER 2.051
FAMILY 2.941
GENERA 3.119

06307615 COOK CREEK NEAR BIRNEY, MT

LOCATION.--Lat 45°22'39", long 106°29'45", in SW¼NE¼NW¼ sec.25, T.5 S., R.42 E., Rosebud County, Hydrologic Unit 10090102, on dirt road, 0.1 mi (0.2 km) upstream from mouth and 3.8 mi (6.1 km) north of Birney.

DRAINAGE AREA.--62.6 mi^2 (162.1 km^2).

PERIOD OF RECORD.--Water years 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
08...	1030	.49	1700	8.1	4.0	8.0	4	8.2	77	2.1	700	160
NOV												
11...	1300	.76	1840	7.8	1.5	2.0	10	13.4	108	1.0	660	130
DEC												
03...	1115	1.3	1840	7.8	8.0	.0	2	12.4	95	.5	660	150
JAN												
08...	1210	1.6	1770	8.1	-22.0	.0	4	11.4	87	.2	660	130
FEB												
04...	1025	.90	1740	8.1	-15.0	.0	7	11.2	86	.4	600	90
MAR												
03...	1045	1.2	1810	8.3	-15.0	.0	4	12.0	92	.2	660	120
APR												
07...	1030	1.2	1630	8.0	18.0	9.0	4	11.0	107	.7	600	96
MAY												
05...	1015	1.4	1650	8.2	14.0	11.0	0	10.9	110	1.5	600	120
JUN												
09...	0945	2.0	1590	7.8	24.0	16.5	5	7.3	83	2.5	590	89
JUL												
08...	1045	.53	1790	7.9	24.0	18.0	10	6.8	80	1.8	660	97
AUG												
04...	1030	.62	1800	8.2	22.0	18.0	4	8.8	104	1.0	670	120
SEP												
01...	1030	.25	1820	7.7	21.0	13.0	10	5.1	54	.4	670	86

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
OCT											
08...	82	120	190	3.1	14	661	0	580	5.5	1.1	20
NOV											
11...	84	110	180	3.0	14	651	0	540	7.6	1.0	20
DEC											
03...	82	110	170	2.9	15	621	0	500	9.7	1.1	21
JAN											
08...	83	110	170	2.9	12	645	0	480	11	1.0	22
FEB											
04...	75	100	170	3.0	14	620	0	460	11	1.1	20
MAR											
03...	83	110	180	3.0	13	653	0	520	8.3	1.2	20
APR											
07...	76	100	170	3.0	12	616	0	480	6.7	1.1	16
MAY											
05...	76	100	170	3.0	13	542	23	500	6.8	1.2	15
JUN											
09...	71	100	170	3.0	15	609	0	430	5.9	1.1	53
JUL											
08...	81	110	190	3.2	12	680	0	520	5.5	1.2	23
AUG											
04...	88	110	190	3.2	16	679	0	490	3.2	1.2	23
SEP											
01...	86	110	210	3.5	16	709	0	510	7.1	1.4	23

06307615 COOK CREEK NEAR BIRNEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT											
08...	1340	1.82	1.77	.34	.03	.73	.76	1.1	.03	200	40
NOV											
11...	1280	1.74	2.63	.59	.03	.54	.57	1.2	.02	170	40
DEC											
03...	1220	1.66	4.28	.72	.02	.22	.24	.96	.03	160	80
JAN											
08...	1210	1.65	5.36	.94	.03	.50	.53	1.5	.02	140	100
FEB											
04...	1160	1.58	2.82	.79	.04	.78	.82	1.6	.18	170	60
MAR											
03...	1260	1.71	4.08	.65	.04	.38	.42	1.1	.00	190	60
APR											
07...	1170	1.59	3.79	.22	.04	.53	.57	.79	.01	170	30
MAY											
05...	1170	1.59	4.42	.13	.00	.51	.51	.64	.02	220	60
JUN											
09...	1150	1.56	6.21	.12	.04	.74	.78	.90	.06	250	100
JUL											
08...	1280	1.74	1.83	.18	.00	.42	.42	.60	.04	210	0
AUG											
04...	1260	1.71	2.11	.22	.02	.66	.68	.90	.04	230	150
SEP											
01...	1310	1.78	.88	.03	.00	.14	.14	.17	.04	250	120

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BISMUTH (BI) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)
OCT											
08...	1030	170	--	1	--	--	10	--	--	10	--
NOV											
11...	1300	100	0	1	1	60	0	10	<13	10	0
JAN											
08...	1210	140	--	0	--	--	0	--	--	0	--
APR											
07...	1030	100	--	0	--	--	10	--	--	<10	--
JUL											
08...	1045	230	--	2	--	--	0	--	--	<10	--

DATE	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)
OCT										
08...	90	--	90	--	.0	--	4	--	<50	--
NOV										
11...	150	80	40	40	.0	.0	4	4	50	2
JAN										
08...	80	--	60	--	.0	--	4	--	<50	--
APR										
07...	100	--	80	--	.0	--	2	--	<50	--
JUL										
08...	110	--	140	--	.0	--	2	--	<50	--

06307615 COOK CREEK NEAR BIRNEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED GALLIUM (GA) (UG/L)	DIS-SOLVED GER-MANIUM (GE) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)
OCT										
08...	10	--	--	0	--	--	--	250	<100	--
NOV										
11...	28	4	<13	<10	1	<8	<10	230	<100	1
JAN										
08...	0	--	--	10	--	--	--	250	<100	--
APR										
07...	10	--	--	10	--	--	--	170	<100	--
JUL										
08...	20	--	--	<10	--	--	--	530	<100	--

DATE	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED STRON-TIUM (SR) (UG/L)	DIS-SOLVED TIN (SN) (UG/L)	DIS-SOLVED TI-TANIUM (TI) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	DIS-SOLVED ZIR-CONIUM (ZR) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
08...	1	--	--	--	--	--	--	--	10	--
NOV										
11...	1	4	<2	1400	<13	<10	1.1	<10	6	4
JAN										
08...	2	--	--	--	--	--	--	--	8	--
APR										
07...	1	--	--	--	--	--	--	--	70	--
JUL										
08...	1	--	--	--	--	--	--	--	0	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
OCT					
08...	1030	8.0	.49	18	.02
NOV					
11...	1300	2.0	.76	4	.01
DEC					
03...	1115	.0	1.3	25	.09
JAN					
08...	1210	.0	1.6	53	.23
FEB					
04...	1025	.0	.90	17	.04
MAR					
03...	1045	.0	1.2	6	.02
APR					
07...	1030	9.0	1.2	29	.09
MAY					
05...	1015	11.0	1.4	10	.04
JUN					
09...	0945	16.5	2.0	24	.13
JUL					
08...	1045	18.0	.53	101	.14
AUG					
04...	1030	18.0	.62	39	.07
SEP					
01...	1030	13.0	.25	38	.03

06307670 BEAR CREEK AT OTTER, MT

LOCATION.--Lat 45°12'20", long 106°12'15", in NW¼NE¼ sec.27, T.7 S., R.45 E., Powder River County, Hydrologic Unit 10090102, 500 ft (150 m) west of Otter Post Office and 2.6 mi (4.2 km) upstream from mouth.

DRAINAGE AREA.--90.4 mi^2 (234.1 km^2).

PERIOD OF RECORD.--Water year 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
MAR												
16...	1600	.01	570	8.4	10.5	.0	20	6.8	59	2.4	250	63

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
MAR											
16...	39	38	120	3.3	11	233	0	310	4.2	.4	7.8

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)
MAR											
16...	646	.88	.02	.01	.11	.62	.73	.74	.15	210	120

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
MAR					
16...	1600	.0	.01	27	.00

06307730 THREEMILE CREEK NEAR ASHLAND, MT

LOCATION.--Lat 45°30'46", long 106°09'25", in NW¼SE¼SE¼ sec.3, T.4 S., R.45 E., Rosebud County, Hydrologic Unit 10090102, on dirt road, 1.5 mi (2.4 km) upstream from mouth and 7.6 mi (12.2 km) southeast of Ashland.

DRAINAGE AREA.--51.5 mi^2 (133.4 km^2).

PERIOD OF RECORD.--Water years 1975 to current year.

REMARKS.--Flow was not present during station visit.

06307740 OTTER CREEK AT ASHLAND, MT

LOCATION.--Lat 45°35'18", long 106°15'17", in NE¼NE¼SE¼ sec.11, T.3 S., R.44 E., Rosebud County, Hydrologic Unit 10090102, on left bank 200 ft (60 m) downstream from bridge on U.S. Highway 212, 2.5 mi (4.0 km) upstream from mouth and 0.3 mi (0.5 km) southeast of Ashland.

DRAINAGE AREA.--707 mi^2 (1,831 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to current year.

GAGE.-- Water-stage recorder. Altitude of gage is 2,920 ft (890 m), from topographic map.

REMARKS.--Water-discharge records good except those for winter period and September which are poor. No gage-height record Jan. 24 to Feb. 17 and Mar. 17 to Apr. 20. Diversions for irrigation of about 4,200 acres (17.0 km^2) above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 341 ft^3/s (9.66 m^3/s) Mar. 6, 1975, gage height, 7.05 ft (2.149 m); no flow part of Nov. 20, 1974, due to temporary storage during construction work upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 40 ft^3/s (1.13 m^3/s) July 3, gage height, 3.21 ft (0.978 m); no peak above base of 50 ft^3/s (1.42 m^3/s); minimum daily, 0.06 ft^3/s (0.002 m^3/s) Sept. 2, 4-8, 11-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	3.9	6.5	7.0	7.0	9.0	8.5	6.9	4.0	3.9	.59	.10
2	2.0	3.7	6.0	6.5	7.0	8.0	8.5	7.0	3.8	3.8	.65	.06
3	1.8	4.1	5.5	6.0	6.5	6.0	8.0	7.4	3.6	19	.80	.10
4	1.8	3.9	5.5	5.5	6.5	7.0	7.5	7.7	3.3	10	.72	.06
5	1.7	4.1	5.0	5.0	6.0	8.0	7.5	9.3	3.2	4.3	.80	.06
6	1.6	3.9	5.5	5.0	6.0	8.5	7.0	8.6	3.0	3.1	.80	.06
7	1.8	4.1	6.0	5.0	6.5	9.0	7.0	7.6	3.1	2.1	.80	.06
8	2.0	4.1	6.0	5.0	7.0	10	7.0	7.3	3.8	2.0	.59	.06
9	2.3	4.1	6.0	5.5	7.5	11	6.5	7.2	4.9	3.1	.59	.15
10	2.3	4.1	6.0	6.0	8.0	12	6.0	6.9	7.0	2.5	.59	.10
11	2.3	4.3	6.0	6.5	8.5	10	7.0	6.7	4.0	2.1	.59	.06
12	2.5	4.3	6.0	6.5	9.0	8.0	7.5	7.0	6.1	1.8	.59	.06
13	2.7	3.9	6.0	6.5	9.5	8.5	8.0	6.8	6.5	1.7	.65	.06
14	2.9	4.1	6.5	6.0	10	8.5	8.0	6.3	7.0	1.6	.59	.10
15	3.1	4.3	7.5	6.0	11	8.5	8.0	6.1	12	1.2	.53	.15
16	3.3	4.3	8.3	6.0	11	9.0	8.0	6.1	9.2	1.6	.48	.15
17	3.5	4.5	8.0	6.5	12	9.0	8.0	6.0	8.1	1.5	.38	.15
18	3.5	4.7	8.0	7.0	12	9.0	8.0	5.6	7.9	1.3	.36	.24
19	3.5	4.7	8.0	7.0	12	9.0	8.0	5.2	7.7	1.7	.24	.24
20	3.5	4.5	8.0	6.8	11	8.5	8.0	4.9	7.8	1.3	.24	.24
21	3.7	4.0	8.0	7.0	10	8.5	8.0	4.8	8.5	1.3	.19	.24
22	4.1	4.0	8.0	7.0	10	8.5	7.4	4.5	11	1.0	.19	.19
23	3.9	4.0	8.0	7.0	10	8.5	7.1	4.3	8.4	.90	.19	.19
24	3.5	4.0	8.0	6.0	10	8.5	6.8	4.0	7.1	1.0	.19	.24
25	3.5	4.0	8.0	5.5	10	8.5	6.4	3.8	6.7	.80	.19	.15
26	3.5	3.5	8.0	5.0	10	8.5	6.3	3.8	6.6	.80	.19	.15
27	3.7	3.5	8.0	6.0	10	8.5	6.6	3.9	6.1	.90	.10	.15
28	3.7	3.5	8.0	7.0	10	8.5	7.1	3.7	5.1	.72	.15	.15
29	3.7	4.0	8.0	7.0	10	8.5	7.2	3.9	4.8	.65	.15	.19
30	3.9	6.0	8.0	7.0	---	8.5	7.0	4.4	4.4	.65	.15	.19
31	3.9	---	7.5	7.0	---	8.5	---	4.3	---	.48	.10	---
TOTAL	91.3	124.1	217.8	192.8	264.0	270.0	221.9	182.0	185.3	78.80	13.37	4.10
MEAN	2.95	4.14	7.03	6.22	9.10	8.71	7.40	5.87	6.18	2.54	.43	.14
MAX	4.1	6.0	8.3	7.0	12	12	8.5	9.3	12	19	.80	.24
MIN	1.6	3.5	5.0	5.0	6.0	6.0	6.0	3.7	3.0	.48	.10	.06
AC-FT	181	246	432	382	524	536	440	361	368	156	27	8.1

CAL YR 1975 TOTAL 7154.58 MEAN 19.6 MAX 308 MIN .80 AC-FT 14190
WTR YR 1976 TOTAL 1845.47 MEAN 5.04 MAX 19 MIN .06 AC-FT 3660

06307740 OTTER CREEK AT ASHLAND, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

REVISIONS.--The daily suspended sediment discharge for Jan. 22, 1975 has been revised to 13 tons/day, superseding figure previously published.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
23...	0840	4.3	2690	8.1	4.5	5.5	6	9.6	86	2.0	820	270
NOV												
12...	0900	4.4	3110	8.2	-5.0	.0	8	12.4	95	1.0	940	420
DEC												
16...	1300	8.3	3220	8.3	-3.0	.0	7	11.8	90	.3	1000	440
JAN												
20...	1300	6.8	3090	8.2	1.0	.0	8	11.8	90	.0	1000	440
FEB												
18...	1500	12	2820	8.2	7.5	.0	10	8.8	67	1.4	930	460
MAR												
16...	1415	9.1	2720	8.2	8.0	.0	7	12.4	95	1.3	870	380
APR												
21...	1000	7.6	3010	8.4	11.5	10.5	20	9.1	89	2.4	970	450
MAY												
19...	1100	5.2	2550	8.0	22.0	18.5	25	7.1	85	1.6	950	440
JUN												
16...	1015	9.0	2300	8.3	31.0	17.5	30	7.0	81	2.2	650	280
JUL												
20...	1445	1.2	2700	8.3	24.0	24.5	20	8.3	112	1.6	800	270
AUG												
18...	0845	.24	2690	8.3	19.0	19.0	25	3.0	37	1.7	820	240
SEP												
29...	0945	.20	2570	8.4	19.0	10.5	15	6.4	66	1.7	730	150

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
OCT											
23...	63	160	400	6.1	21	670	0	1100	14	.7	7.3
NOV											
12...	96	170	400	5.7	22	630	0	1300	14	.8	7.6
DEC											
16...	110	180	400	5.5	20	706	0	1300	13	.8	14
JAN											
20...	120	170	380	5.2	20	685	0	1300	11	.8	17
FEB											
18...	110	160	340	4.8	20	561	9	1200	12	.7	15
MAR											
16...	100	150	320	4.7	17	593	0	1100	2.2	.6	11
APR											
21...	93	180	390	5.4	19	579	32	1200	1.3	.7	4.9
MAY											
19...	83	180	390	5.5	19	618	0	1300	12	.7	5.0
JUN											
16...	45	130	290	5.0	16	454	0	890	9.9	.6	4.6
JUL											
20...	72	150	380	5.9	20	588	27	1100	13	.8	7.3
AUG											
18...	66	160	390	5.9	22	714	0	1000	16	.9	8.2
SEP											
29...	62	140	380	6.1	22	587	58	930	15	.9	8.6

06307740 OTTER CREEK AT ASHLAND, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT											
23...	2100	2.86	24.4	.12	.02	1.2	1.2	1.3	.04	520	20
NOV											
12...	2320	3.16	28.0	.15	.00	.69	.69	.84	.00	490	10
DEC											
16...	2390	3.25	53.6	.40	.05	.62	.67	1.1	.00	380	30
JAN											
20...	2360	3.21	43.3	.71	.13	1.3	1.4	2.1	.01	420	20
FEB											
18...	2140	2.91	69.3	.62	.04	.76	.80	1.4	.03	380	10
MAR											
16...	1990	2.71	48.9	.27	.04	.87	.91	1.2	.07	280	30
APR											
21...	2210	3.01	45.3	.01	.03	1.1	1.1	1.1	.04	420	60
MAY											
19...	2290	3.11	32.2	.04	.04	.79	.83	.87	.08	420	10
JUN											
16...	1610	2.19	39.1	.40	.01	.89	.90	1.3	.06	340	50
JUL											
20...	2060	2.80	6.67	.04	.08	.75	.83	.87	.08	480	20
AUG											
18...	2020	2.75	1.31	.00	.02	.91	.93	.93	.05	560	70
SEP											
29...	1910	2.60	1.03	.00	.00	.82	.82	.82	.07	590	70

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BISMUTH (BI) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)
OCT											
23...	0840	230	--	2	--	--	--	--	--	10	--
NOV											
12...	0900	160	0	1	1	20	10	10	<11	<10	1
JAN											
20...	1300	220	--	0	--	--	10	--	--	<10	--
APR											
21...	1000	450	--	1	--	--	0	--	--	<10	--
JUL											
20...	1445	710	--	4	--	--	0	--	--	<10	--

DATE	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED GALLIUM (GA) (UG/L)	DIS-SOLVED GER-MANIUM (GE) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)
OCT										
23...	90	--	--	0	--	--	--	280	<100	--
NOV										
12...	15	0	<10	<10	2	<5	<20	300	<100	1
JAN										
20...	0	--	--	10	--	--	--	310	<100	--
APR										
21...	0	--	--	10	--	--	--	1000	<100	--
JUL										
20...	10	--	--	<10	--	--	--	1300	<100	--

DATE	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)
OCT										
23...	130	--	60	--	.1	--	7	--	50	--
NOV										
12...	150	130	50	20	.0	.0	7	4	50	3
JAN										
20...	140	--	90	--	.4	--	3	--	<50	--
APR										
21...	140	--	160	--	.0	--	5	--	50	--
JUL										
20...	140	--	120	--	.0	--	2	--	50	--

06307740 OTTER CREEK AT ASHLAND, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL SELENIUM (SE) (UG/L)	DIS-SOLVED SELENIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED STRON-TIUM (SR) (UG/L)	DIS-SOLVED TIN (SN) (UG/L)	DIS-SOLVED TI-TANIUM (TI) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	DIS-SOLVED ZIR-CONIUM (ZR) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
23...	1	--	--	--	--	--	--	--	30	--
NOV										
12...	1	1	<2	1100	<11	<8	.8	<20	40	10
JAN										
20...	1	--	--	--	--	--	--	--	20	--
APR										
21...	1	--	--	--	--	--	--	--	40	--
JUL										
20...	1	--	--	--	--	--	--	--	10	--

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	DIS-SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS-PENDED GROSS ALPHA AS U-NAT. (UG/L)	DIS-SOLVED GROSS BETA AS CS-137 (PC/L)	SUS-PENDED GROSS BETA AS CS-137 (PC/L)	DIS-SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS-PENDED GROSS BETA AS SR90 /Y90 (PC/L)	DIS-SOLVED RA-226 (RADON METHOD) (PC/L)	DIS-SOLVED URANIUM (DIRECT FLUORO-METRIC) (PC/L)	TOTAL FILT-RABLE RESIDUE (MG/L)	TOTAL NON-FILT-RABLE RESIDUE (MG/L)
NOV											
12...	0900	<42	<.4	66	5.4	53	5.0	.07	10	3300	2

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
OCT					
23...	0840	5.5	4.3	19	.22
NOV					
12...	0900	.0	4.4	28	.33
DEC					
10...	1300	.0	8.3	20	.45
JAN					
20...	1300	.0	6.8	32	.59
FEB					
18...	1500	.0	12	41	1.3
MAR					
16...	1415	.0	9.1	83	2.0
APR					
21...	1000	10.5	7.6	57	1.2
MAY					
19...	1100	18.5	5.2	83	1.2
JUN					
16...	1015	17.5	9.0	53	1.3
JUL					
20...	1445	24.5	1.2	68	.22
AUG					
18...	0845	19.0	1.3	125	.44
SEP					
29...	0945	10.5	1.0	28	.08

06307810 BEAVER CREEK NEAR ASHLAND, MT

LOCATION.--Lat 45°47'52", long 106°14'17", in NW¼SE¼NE¼ sec.34, T.1 N., R.44 E., Rosebud County, Hydrologic Unit 10090102, at county road bridge, 0.8 mi (1.3 km) upstream from mouth and 14.7 mi (23.7 km) north of Ashland.

DRAINAGE AREA.--92.3 mi² (239.1 km²).

PERIOD OF RECORD.--Water years 1975 to September 1976 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
MAR												
17...	1640	.61	3730	8.1	17.0	2.0	1	10.2	82	1.3	1300	750
APR												
21...	1300	1.1	4080	8.1	13.0	10.0	6	7.3	72	--	1400	790
MAY												
11...	1045	.58	4030	8.0	6.0	14.0	5	6.0	64	1.4	1500	850
JUN												
15...	1330	.89	4000	8.1	25.5	15.5	2	8.6	95	2.0	1300	700

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
MAR											
17...	150	220	490	6.0	19	650	0	1700	9.8	.5	13
APR											
21...	160	240	530	6.2	22	731	0	1800	1.2	.5	11
MAY											
11...	160	260	560	6.4	25	755	0	2000	10	.5	10
JUN											
15...	140	220	390	4.8	22	682	0	1900	11	.5	15

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)
MAR											
17...	2920	3.97	4.81	.01	.04	.77	.81	.82	.07	640	30
APR											
21...	3130	4.26	9.30	.01	.02	1.2	1.2	1.2	.01	850	90
MAY											
11...	3400	4.62	5.32	.01	.00	.22	.22	.23	.04	940	60
JUN											
15...	3040	4.13	7.31	.04	.04	2.4	2.4	2.4	.06	900	110

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
APR								
21...	1300	70	10	0	<10	0	10	280

DATE	TOTAL LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL MOLYBDENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)
APR								
21...	<100	140	50	.0	3	<50	0	30

06307810 BEAVER CREEK NEAR ASHLAND, MT--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
MAR					
17...	1640	2.0	.61	6	.01
APR					
21...	1300	10.0	1.1	13	.04
MAY					
11...	1045	14.0	.58	29	.05
JUN					
16...	1330	15.5	.89	7	.02

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND, MT

LOCATION.--Lat 45°52'18", long 106°11'17", in NE¼SW¼NW¼ sec.6, T.1 N., R.45 E., Custer County, Hydrologic Unit 10090102, on left bank 3.1 mi (5.0 km) downstream from Goodale Creek, 6.5 mi (10.5 km) downstream from Brandenberg Bridge, and 21 mi (34 km) north of Ashland.

DRAINAGE AREA.--4,062 mi^2 (10,521 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1973 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,710 ft (826 m), from topographic map.

REMARKS.--Water-discharge records good except those for winter period and June, which are poor. Flow regulated by Tongue River Reservoir (see p.582), and many small reservoirs in Wyoming (combined capacity, about 15,000 acre-ft or 18.5 hm^3). Diversions for irrigation of about 73,000 acres (295 km^2) above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,730 ft^3/s (134 m^3/s) June 28, 1975, gage height, 6.65 ft (2.027 m); maximum gage height, 8.03 ft (2.448 m) Mar. 6, 1975 (backwater from ice); minimum daily discharge, 45 ft^3/s (1.27 m^3/s) Nov. 30, 1975.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since 1966, about 5,740 ft^3/s (163 m^3/s) June 18, 1967, from record at discontinued station, Tongue River near Ashland, 13 mi (21 km) upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,570 ft^3/s (44.5 m^3/s) June 12, gage height, 5.11 ft (1.558 m); minimum daily, 45 ft^3/s (1.27 m^3/s) Nov. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	248	193	55	330	270	280	352	460	792	1050	492	322
2	248	172	70	300	250	260	352	456	816	1050	500	319
3	251	139	95	270	240	240	352	456	907	1120	492	319
4	255	118	200	250	230	220	352	472	949	984	488	322
5	251	107	210	220	220	240	344	520	991	914	480	322
6	251	102	200	210	210	270	344	520	1080	907	468	322
7	251	97	210	230	200	290	340	510	1100	970	472	322
8	258	92	230	250	200	320	337	505	1220	792	460	319
9	258	87	270	270	230	360	319	505	1340	732	460	310
10	262	81	260	290	260	390	325	500	1480	660	460	310
11	258	70	250	320	280	350	340	500	1530	545	448	319
12	217	65	240	340	300	300	340	624	1540	505	452	322
13	199	70	240	330	310	310	340	672	1480	510	452	334
14	196	82	240	310	310	320	344	684	1430	488	444	337
15	196	87	240	320	300	330	344	696	1400	480	436	340
16	193	87	230	330	300	340	352	690	1420	484	444	344
17	190	87	210	340	300	360	364	696	1400	472	448	334
18	190	86	230	350	300	402	376	696	1400	468	448	325
19	187	84	240	340	290	392	380	702	1400	476	444	325
20	187	62	250	320	270	344	384	690	1400	472	448	328
21	190	60	270	300	270	331	380	672	1400	472	436	328
22	196	60	290	290	280	328	368	678	1400	464	432	331
23	199	60	300	270	290	319	370	690	1400	468	436	328
24	202	60	310	240	300	319	370	690	1400	468	436	328
25	199	58	320	230	300	319	370	696	1400	472	440	331
26	196	55	330	220	320	356	370	702	1400	436	444	340
27	193	55	330	210	310	360	400	696	1400	404	444	337
28	193	55	340	230	290	356	452	690	1350	416	392	328
29	193	50	350	250	290	356	472	696	1310	464	328	322
30	193	45	350	270	---	356	468	702	1090	468	325	322
31	193	---	350	280	---	352	---	768	---	480	316	---
TOTAL	6693	2528	7710	8710	7920	10070	11001	19234	38625	19091	13665	9790
MEAN	216	84.3	249	281	273	325	367	620	1288	616	441	326
MAX	262	193	350	350	320	402	472	768	1540	1120	500	344
MIN	187	45	55	210	200	220	319	456	792	404	316	310
AC-FT	13280	5010	15290	17280	15710	19970	21820	38150	76610	37870	27100	19420

CAL YR 1975 TOTAL 314085 MEAN 861 MAX 4690 MIN 45 AC-FT 623000
WTR YR 1976 TOTAL 155037 MEAN 424 MAX 1540 MIN 45 AC-FT 307500

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND, MT--Continued

WATER-QUALITY RECORDS

LOCATION.--Samples collected from Brandenberg Bridge on county road, 1.7 mi (2.7 km) north of Brandenberg and 6.5 mi (10.5 km) upstream from gaging station.
PERIOD OF RECORD.--Water years 1974 to current year.
PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1974 to current year.
SUSPENDED SEDIMENT DISCHARGE: October 1974 to current year.
REMARKS.--Flow regulated by Tongue River Reservoir, diversions for irrigation, and many small reservoirs in Wyoming.
EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum daily, 29.0°C July 24, 1976; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily, 1,040 mg/L June 11, 1976; minimum daily, 2 mg/L Oct. 7, Nov. 9, 1974, Oct. 31, Nov. 7, 15-17, 1975.
SEDIMENT LOADS: Maximum daily, 9,430 tons (8,550 tonnes) June 28, 1975; minimum daily, 0.47 ton (0.43 tonne) Nov. 15-17, 1975.
EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum daily, 29.0°C July 24; minimum daily, 0.0°C on many days during November to March.
SEDIMENT CONCENTRATIONS: Maximum daily, 1,040 mg/L June 11; minimum daily, 2 mg/L Oct. 31, Nov. 7, 15-17.
SEDIMENT LOADS: Maximum daily, 4,300 tons (3,900 tonnes); minimum daily, 0.47 ton (0.43 tonne) Nov. 15-17.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
23...	1300	208	960	8.4	3.5	5.5	1	11.0	96	.8	400	140
NOV												
12...	1030	83	1300	8.3	-2.0	.0	3	12.8	97	.4	480	150
DEC												
18...	1100	231	1070	8.4	4.5	.0	5	12.0	91	.5	440	150
JAN												
22...	1030	288	1040	8.0	2.0	.0	6	12.1	91	.5	410	130
FEB												
25...	1100	306	969	8.2	8.0	1.0	8	11.7	91	.4	410	140
MAR												
18...	1000	370	990	8.1	13.5	1.0	15	11.1	86	1.8	420	150
APR												
22...	1000	373	960	8.2	13.0	10.5	10	9.3	92	1.4	390	140
MAY												
20...	1100	700	848	8.1	20.0	19.0	20	8.0	95	2.2	370	160
JUN												
29...	1330	1130	361	7.9	24.5	22.0	40	8.0	100	1.0	150	39
JUL												
21...	0945	437	463	8.1	28.0	22.5	15	7.4	94	.8	200	48
AUG												
18...	1215	450	930	8.2	26.5	22.0	15	7.8	98	1.8	250	76
SEP												
28...	1330	346	660	8.4	23.0	14.0	2	9.8	104	1.3	280	98

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	SODIUM AD-SORP-TION RATIO	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)
OCT											
23...	69	56	69	1.5	5.6	304	10	300	4.9	.4	5.1
NOV											
12...	88	62	110	2.2	6.2	397	0	390	5.9	.4	9.3
DEC											
18...	83	56	69	1.4	5.2	344	5	300	6.1	.3	3.4
JAN											
22...	77	52	64	1.4	5.1	338	0	270	4.3	.3	3.5
FEB											
25...	74	55	62	1.3	4.9	333	0	270	5.7	.4	3.0
MAR											
18...	75	57	68	1.4	5.2	329	0	280	4.5	.4	4.1
APR											
22...	72	52	64	1.4	5.0	309	0	280	4.9	.3	3.1
MAY											
20...	67	48	50	1.1	4.6	250	0	260	4.3	.3	1.1
JUN											
29...	32	17	17	.6	2.0	135	0	74	2.6	.2	5.8
JUL											
21...	42	23	24	.7	2.6	185	0	100	1.8	.2	5.2
AUG											
18...	51	30	28	.8	3.3	213	0	120	2.6	.3	6.5
SEP											
28...	50	38	39	1.0	4.3	223	0	190	3.1	.3	5.5

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT											
23...	670	.91	376	.00	.01	.67	.68	.68	.01	160	10
NOV											
12...	868	1.18	195	.05	.04	.32	.36	.41	.00	170	0
DEC											
18...	698	.95	435	.02	.01	.41	.42	.44	.00	120	10
JAN											
22...	643	.87	500	.08	.01	.50	.51	.59	.01	130	40
FEB											
25...	639	.87	528	.02	.03	1.1	1.1	1.1	.02	110	10
MAR											
18...	657	.89	656	.08	.02	--	--	--	.06	130	10
APR											
22...	634	.86	639	.03	.00	.47	.47	.50	.03	140	10
MAY											
20...	559	.76	1060	.00	.00	.60	.60	.60	.08	70	0
JUN											
29...	217	.30	662	.05	.02	.73	.75	.80	.13	60	70
JUL											
21...	290	.39	342	.03	--	--	.07	.10	.04	80	40
AUG											
18...	347	.47	422	.00	.00	.64	.64	.64	.05	100	120
SEP											
28...	440	.60	411	.11	.05	.05	.10	.21	.02	110	60

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BISMUTH (BI) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)
OCT											
23...	1300	100	--	2	--	--	--	--	--	10	--
NOV											
12...	1030	80	0	1	0	90	10	10	<10	0	0
JAN											
22...	1030	230	--	0	--	--	0	--	--	<10	--
APR											
22...	1000	300	--	1	--	--	10	--	--	<10	--
JUL											
21...	0945	350	--	1	--	--	0	--	--	<10	--

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL CHROMIUM (CR) (UG/L)	DIS-SOLVED CHROMIUM (CR) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED GALLIUM (GA) (UG/L)	DIS-SOLVED GERMANIUM (GE) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)
OCT										
23...	50	--	--	0	--	--	--	110	<100	--
NOV										
12...	10	0	<10	<10	1	<6	<10	150	<100	1
JAN										
22...	0	--	--	<10	--	--	--	220	<100	--
APR										
22...	0	--	--	10	--	--	--	490	<100	--
JUL										
21...	20	--	--	20	--	--	--	650	<100	--

DATE	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYBDENUM (MO) (UG/L)	DIS-SOLVED MOLYBDENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)
OCT										
23...	20	--	10	--	.2	--	3	--	0	--
NOV										
12...	30	30	70	20	.1	.1	3	0	50	2
JAN										
22...	30	--	20	--	.0	--	2	--	<50	--
APR										
22...	20	--	60	--	.0	--	2	--	<50	--
JUL										
21...	20	--	40	--	.0	--	0	--	<50	--

DATE	TOTAL SELENIUM (SE) (UG/L)	DIS-SOLVED SELENIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED STRONTIUM (SR) (UG/L)	DIS-SOLVED TIN (SN) (UG/L)	DIS-SOLVED TITANIUM (TI) (UG/L)	DIS-SOLVED VANADIUM (V) (UG/L)	DIS-SOLVED ZIRCONIUM (ZR) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
23...	0	--	--	--	--	--	--	--	40	--
NOV										
12...	0	0	<1	940	<10	<10	.5	<10	0	10
JAN										
22...	1	--	--	--	--	--	--	--	10	--
APR										
22...	1	--	--	--	--	--	--	--	30	--
JUL										
21...	1	--	--	--	--	--	--	--	10	--

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	DIS-SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS-PENDED GROSS ALPHA AS U-NAT. (UG/L)	DIS-SOLVED GROSS BETA AS CS-137 (PC/L)	SUS-PENDED GROSS BETA AS CS-137 (PC/L)	DIS-SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS-PENDED GROSS BETA AS SR90 /Y90 (PC/L)	DIS-SOLVED RA-226 (RADON METHOD) (PC/L)	TOTAL FILTRABLE RESIDUE (MG/L)	TOTAL NON-FILTRABLE RESIDUE (MG/L)
NOV										
12...	1030	<14	<.4	12	1.0	10	.9	.06	1000	7

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND, MT--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	9.0	1.0	0.0	---	---	11.0	---	---	27.0	23.5	24.0
2	15.0	---	0.5	---	2.5	0.0	6.0	10.5	24.0	23.0	---	---
3	---	---	1.0	0.0	0.5	0.5	8.0	17.0	---	---	25.5	23.0
4	---	---	1.5	0.5	0.0	0.0	8.5	14.5	24.0	26.0	---	---
5	14.5	---	---	0.0	0.0	1.5	15.0	15.0	24.0	---	23.5	---
6	15.0	8.0	0.5	0.5	---	1.5	15.0	10.5	23.0	28.0	26.5	---
7	---	7.5	0.5	0.0	1.0	2.0	15.0	18.5	25.0	27.5	---	---
8	---	---	0.0	0.0	1.0	1.5	14.0	16.5	24.5	---	26.5	---
9	11.0	3.0	---	1.0	2.5	1.5	17.0	20.0	25.0	---	---	---
10	---	2.0	0.0	1.0	2.0	2.0	13.0	18.0	25.5	---	24.5	---
11	13.5	---	0.0	0.5	1.5	0.5	14.0	14.0	---	---	25.0	---
12	9.0	---	0.5	0.5	1.5	0.5	---	16.0	19.0	---	26.0	---
13	10.0	4.5	0.0	0.0	2.0	1.0	18.0	19.0	19.0	---	26.5	---
14	8.0	5.5	0.5	0.0	2.0	1.5	16.0	---	---	28.5	25.0	---
15	9.0	5.0	0.0	0.5	2.0	2.0	15.0	17.0	18.0	26.0	24.0	---
16	---	3.5	0.5	1.0	1.5	1.5	12.5	17.0	17.0	26.0	---	---
17	13.5	4.0	0.0	0.5	2.0	4.5	10.5	20.5	19.0	28.0	---	---
18	---	---	---	0.5	1.0	3.0	11.5	21.5	22.0	28.0	25.0	---
19	12.0	1.5	0.5	0.5	0.0	5.5	---	17.0	---	---	26.5	---
20	11.0	0.0	0.5	1.5	1.0	3.5	13.5	22.0	---	26.5	26.0	---
21	---	---	0.5	1.0	1.0	5.0	13.0	21.5	23.0	27.0	26.5	---
22	---	0.0	0.0	0.0	0.5	5.0	12.5	19.0	21.0	---	---	---
23	7.0	0.5	1.0	1.5	1.5	9.0	11.0	16.0	20.0	28.5	25.0	---
24	6.0	0.0	0.0	1.5	1.0	---	14.5	19.5	20.0	29.0	---	---
25	---	---	0.5	0.0	1.5	9.0	15.0	19.5	18.0	26.0	25.0	---
26	5.0	---	1.0	0.5	2.0	8.5	11.0	---	19.0	---	---	---
27	5.0	0.0	1.0	1.5	1.0	8.5	7.0	22.0	21.0	25.0	21.0	---
28	---	0.0	0.0	1.5	1.0	7.5	7.5	24.0	21.5	---	---	---
29	6.0	---	0.0	1.5	1.0	8.5	7.5	19.5	24.0	26.0	23.5	---
30	5.0	0.0	1.0	---	---	8.0	13.0	20.5	24.0	---	22.0	18.0
31	5.5	---	0.0	1.5	---	13.0	---	22.0	---	26.5	23.0	---
MONTH	---	---	0.5	0.5	1.5	4.0	12.5	18.0	21.5	---	---	---

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	248	5	3.3	193	4	2.1	55	14	2.1
2	248	5	3.3	172	5	2.3	70	9	1.7
3	251	5	3.4	139	5	1.9	95	25	6.4
4	255	6	4.1	118	5	1.6	200	16	8.6
5	251	7	4.7	107	5	1.4	210	7	4.0
6	251	8	5.4	102	5	1.4	200	10	5.4
7	251	9	6.1	97	2	.52	210	20	11
8	258	10	7.0	92	3	.75	230	19	12
9	258	13	9.1	87	3	.70	270	15	11
10	262	17	12	81	8	1.7	260	18	13
11	258	14	9.8	70	10	1.9	250	18	12
12	217	9	5.3	65	12	2.1	240	20	13
13	199	5	2.7	70	6	1.1	240	21	14
14	196	12	6.4	82	5	1.1	240	9	5.8
15	196	9	4.8	87	2	.47	240	12	7.8
16	193	5	2.6	87	2	.47	230	10	6.2
17	190	3	1.5	87	2	.47	210	9	5.1
18	190	5	2.6	88	14	3.3	230	15	9.3
19	187	7	3.5	84	23	5.2	240	18	12
20	187	6	3.0	62	11	1.8	250	21	14
21	190	5	2.6	60	7	1.1	270	27	20
22	196	4	2.1	60	9	1.5	290	9	7.0
23	199	4	2.1	60	5	.81	300	11	8.9
24	202	7	3.8	60	7	1.1	310	8	6.7
25	199	8	4.3	58	8	1.3	320	13	11
26	196	10	5.3	55	8	1.2	330	15	13
27	193	6	3.1	55	12	1.8	330	18	16
28	193	5	2.6	55	17	2.5	340	14	13
29	193	3	1.6	50	17	2.3	350	19	18
30	193	9	4.7	45	30	3.6	350	18	17
31	193	2	1.0	---	---	---	350	40	38
TOTAL	6693	---	133.8	2528	---	49.49	7710	---	343.0

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	330	27	24	270	36	26	280	89	67
2	300	23	19	250	26	18	260	90	63
3	270	19	14	240	24	16	240	47	30
4	250	12	8.1	230	23	14	220	53	31
5	220	9	5.3	220	13	7.7	240	79	51
6	210	12	6.8	210	12	6.8	270	91	66
7	230	24	15	200	22	12	290	85	67
8	250	26	18	200	29	16	320	108	93
9	270	33	24	230	36	22	360	85	83
10	290	26	20	260	19	13	390	83	87
11	320	27	23	280	17	13	350	85	80
12	340	29	27	300	22	18	300	177	143
13	330	44	39	310	28	23	310	124	104
14	310	21	18	310	26	22	320	96	83
15	320	20	17	300	28	23	330	72	64
16	330	18	16	300	20	16	340	122	112
17	340	11	10	300	22	18	360	104	101
18	350	17	16	300	16	13	402	91	99
19	340	19	17	290	15	12	392	68	72
20	320	19	16	270	16	12	344	23	21
21	300	17	14	270	15	11	331	31	28
22	290	21	16	280	18	14	328	36	32
23	270	21	15	290	23	18	319	32	28
24	240	23	15	300	13	11	319	26	22
25	230	20	12	300	41	33	319	24	21
26	220	23	14	320	71	61	356	43	41
27	210	19	11	310	61	51	360	67	65
28	230	10	6.2	290	128	100	356	39	37
29	250	17	11	290	120	94	356	20	19
30	270	19	14	---	---	---	356	41	39
31	280	47	36	---	---	---	352	188	179
TOTAL	8710	---	517.4	7920	---	714.5	10070	---	2028
		APRIL			MAY			JUNE	
1	352	43	41	460	86	107	792	133	284
2	352	33	31	456	80	98	816	253	557
3	352	49	47	456	71	87	907	333	815
4	352	285	271	472	94	120	949	387	992
5	344	52	48	520	115	161	991	304	813
6	344	35	33	520	109	153	1080	200	583
7	340	39	36	510	109	150	1100	348	1030
8	337	42	38	505	121	165	1220	442	1460
9	319	37	32	505	125	170	1340	874	3160
10	325	52	46	500	91	123	1480	735	2940
11	340	49	45	500	111	150	1530	1040	4300
12	340	43	39	624	195	329	1540	823	3420
13	340	46	42	672	206	374	1480	493	1970
14	344	42	39	684	187	345	1430	566	2190
15	344	45	42	696	164	308	1400	599	2260
16	352	47	45	690	141	263	1420	364	1400
17	364	60	59	696	135	254	1400	214	809
18	376	46	47	696	145	272	1400	204	771
19	380	51	52	702	139	263	1400	179	677
20	384	47	49	690	137	255	1400	190	718
21	380	38	39	672	137	249	1400	252	953
22	368	37	37	678	139	254	1400	222	839
23	370	53	53	690	154	287	1400	194	733
24	370	49	49	690	136	253	1400	215	813
25	370	45	45	696	131	246	1400	200	756
26	370	52	52	702	134	254	1400	193	730
27	400	49	53	696	128	241	1400	185	699
28	452	62	76	690	123	229	1350	185	674
29	472	98	125	696	125	235	1310	157	555
30	468	87	110	702	128	243	1090	139	409
31	---	---	---	768	171	355	---	---	---
TOTAL	11001	---	1721	19234	---	6993	38625	---	38310

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	1050	112	318	492	28	37	322	47	41
2	1050	203	576	500	46	62	319	54	47
3	1120	628	1900	492	75	100	319	40	34
4	984	628	1670	488	66	87	322	42	37
5	914	424	1050	480	53	69	322	38	33
6	907	160	392	468	61	77	322	28	24
7	970	160	419	472	68	87	322	37	32
8	792	145	310	460	45	56	319	37	32
9	732	126	249	460	53	66	310	20	17
10	660	94	168	460	62	77	310	21	18
11	545	68	100	448	66	80	319	22	19
12	505	61	83	452	67	82	322	24	21
13	510	73	101	452	69	84	334	23	21
14	488	52	69	444	75	90	337	27	25
15	480	45	58	436	68	80	340	31	28
16	484	42	55	444	59	71	344	33	31
17	472	50	64	448	58	70	334	44	40
18	468	51	64	448	59	71	325	27	24
19	476	36	46	444	62	74	325	21	18
20	472	33	42	448	76	92	328	20	18
21	472	32	41	436	72	85	328	21	19
22	464	22	28	432	70	82	331	21	19
23	468	16	20	436	77	91	328	17	15
24	468	24	30	436	77	91	328	11	9.7
25	472	18	23	440	63	75	331	14	13
26	436	29	34	444	57	68	340	18	17
27	404	111	121	444	58	70	337	16	15
28	416	67	75	392	61	65	328	12	11
29	464	23	29	328	44	39	322	7	6.1
30	468	13	16	325	24	21	322	11	9.6
31	480	14	18	316	33	28	---	---	---
TOTAL	19091	---	8169	13665	---	2227	9790	---	694.4
YEAR	155037.0		61900.59						

06307840 LISCOM CREEK NEAR ASHLAND, MT

LOCATION.--Lat 45°54'09", long 106°09'51", in SE¼NW¼NW¼ sec.27, T.2 N., R.45 E., Custer County, Hydrologic Unit 10090102, at county road bridge, 0.8 mi (1.3 km) upstream from mouth and 21 mi (34 km) northeast of Ashland.

DRAINAGE AREA.--47.6 mi^2 (123.3 km^2).

PERIOD OF RECORD.--Water years 1975 to current year.

REMARKS.--Flow not present during station visits.

06307890 FOSTER CREEK NEAR VOLBORG, MT

LOCATION.--Lat 46°01'53", long 105°57'07", in NE¼SE¼NW¼ sec.12, T.3 N., R.46 E., Custer County, Hydrologic Unit 10090102, 0.6 mi (1.0 km) upstream from mouth and 18.5 mi (29.8 km) northwest of Volborg.

DRAINAGE AREA.--116 mi^2 (300 km^2).

PERIOD OF RECORD.--Water years 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	AIR TEMPER-ATURE (DEG C)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	PER-CENT SATUR-ATION	BIO-CHEM-ICAL OXYGEN DEMAND 5 DAY (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)
JAN												
21...	1745	1.0	1110	7.5	2.0	.0	45	10.4	78	6.6	170	33
FEB												
24...	1445	.37	2170	7.9	16.5	1.0	20	8.2	63	3.0	350	85
MAR												
16...	1445	.13	4150	8.1	6.0	3.0	8	11.2	92	3.0	660	190
MAY												
19...	1530	.89	4300	8.3	26.0	22.5	15	7.3	92	2.0	690	230
JUN												
15...	1545	4.4	1900	8.1	25.5	18.0	2200	7.2	83	4.0	180	0

06307890 FOSTER CREEK NEAR VOLBORG, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	SODIUM AD-SORP-TION RATIO	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)
JAN											
21...	29	23	180	6.1	7.6	164	0	420	3.3	.3	5.4
FEB											
24...	59	49	360	8.4	8.2	322	0	870	8.4	.3	7.6
MAR											
16...	100	100	770	13	10	578	0	1800	15	.4	9.4
MAY											
19...	110	100	770	13	12	561	0	1900	16	.4	7.1
JUN											
15...	34	23	350	11	6.8	278	0	750	9.0	.5	5.7

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
JAN											
21...	750	1.02	2.11	.03	.00	1.8	1.8	1.8	.09	230	170
FEB											
24...	1520	2.07	1.52	.01	.09	.89	.98	.99	.06	270	70
MAR											
16...	3090	4.20	1.08	.01	.09	.87	.96	.97	.06	0	60
MAY											
19...	3190	4.34	7.67	.01	.02	.93	.95	.96	.06	570	30
JUN											
15...	1320	1.80	15.7	.32	.18	.30	.48	.80	.90	340	140

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
JAN								
21...	1745	1900	1	0	<10	0	10	2400

DATE	TOTAL LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)
JAN								
21...	<100	10	150	.2	0	<50	0	50

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
JAN					
21...	1745	.0	1.0	86	.23
FEB					
24...	1445	1.0	.37	23	.02
MAR					
16...	1445	3.0	.13	41	.01
MAY					
19...	1530	22.5	.89	17	.04
JUN					
15...	1545	18.0	4.4	4260	51

06308080 PUMPKIN CREEK NEAR SONNETTE, MT

LOCATION.--Lat 45°32'20", long 105°49'03", in NE¼SE¼SE¼ sec.29, T.3 S., R.48 E., Powder River County, Hydrologic Unit 10090102, at bridge on U.S. Highway 212, 5.9 mi (9.5 km) upstream from Winter Gulch and 9.1 mi (14.6 km) north of Sonnette.

DRAINAGE AREA.--70.7 mi² (183.1 km²).

PERIOD OF RECORD.--October 1975 to September 1976.

REMARKS.--Flow not present during station visits.

06308160 PUMPKIN CREEK NEAR LOESCH, MT

LOCATION.--Lat 45°42'40", long 105°43'50", in NW¼ sec.31, T.1 S., R.49 E., Powder River County, Hydrologic Unit 10090102, at bridge on county road, 0.9 mi (1.4 km) northeast of Loesch, and 9 mi (14.5 km) upstream from Little Pumpkin Creek.

DRAINAGE AREA.--102 mi² (264 km²).

PERIOD OF RECORD.--October 1975 to September 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
DEC												
10...	1600	.30	4830	8.0	.5	.5	7	6.8	53	.4	1600	1000
JAN												
14...	1430	.13	5430	7.5	-1.0	.0	5	3.7	29	.7	1800	1200
FEB												
12...	1200	.42	4600	7.8	11.0	1.0	5	4.9	39	.4	1500	900
MAR												
11...	1000	.31	4100	7.9	-3.0	.5	4	8.2	64	.8	1300	840
APR												
14...	1030	.25	5380	8.1	13.0	14.0	10	4.8	52	2.6	1800	1200
MAY												
11...	1300	.30	4900	8.1	8.0	13.0	5	6.4	68	1.2	1600	1000
JUN												
09...	1300	.05	4980	7.8	24.5	26.0	5	6.0	85	2.5	1600	1100
JUL												
14...	1015	.02	5900	7.8	24.0	22.0	7	6.0	77	4.6	1900	1200

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
DEC											
10...	230	250	630	6.8	22	716	0	2200	17	.5	18
JAN											
14...	260	290	760	7.7	23	827	0	3000		.6	17
FEB											
12...	220	220	620	7.1	20	681	0	2200	14	.5	14
MAR											
11...	190	210	550	6.5	17	613	0	2000	12	.5	11
APR											
14...	210	300	800	8.3	23	722	0	2700	18	.6	13
MAY											
11...	200	260	690	7.6	21	638	0	2400	15	.5	7.8
JUN											
09...	170	280	710	7.8	20	597	0	2700	14	.4	13
JUL											
14...	220	340	960	9.5	26	959	0	3100	14	.6	24

06308160 PUMPKIN CREEK NEAR LOESCH, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
DEC											
10...	3720	5.06	3.01	.07	.02	.95	.97	1.0	.05	1100	60
JAN											
14...	4770	4.69	1.67	.03	.13	1.2	1.3	1.3	.03	1300	120
FEB											
12...	3650	4.96	4.14	.01	.00	.87	.87	.88	.02	1100	120
MAR											
11...	3290	4.47	2.75	.01	.04	.62	.66	.67	.01	1000	30
APR											
14...	4420	6.01	2.98	.00	.00	1.5	1.5	1.5	.07	1200	40
MAY											
11...	3910	5.32	3.17	.02	.03	1.1	1.1	1.1	.04	1100	40
JUN											
09...	4200	5.71	.57	.13	.03	1.1	1.1	1.2	.09	1500	30
JUL											
14...	5160	7.02	.28	.01	.01	1.5	1.5	1.5	.45	1800	160

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
JAN								
14...	1430	130	0	0	10	0	10	560
APR								
14...	1030	340	3	10	<10	10	20	1200
JUL								
14...	1015	60	18	0	10	10	10	550

DATE	TOTAL LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)
JAN								
14...	<100	160	180	.0	2	50	0	30
APR								
14...	<100	140	450	.0	4	50	0	0
JUL								
14...	<100	20	4500	.0	2	100	0	20

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
DEC					
10...	1600	.5	.30	4	.00
JAN					
14...	1430	.0	.13	225	.08
FEB					
12...	1200	1.0	.42	42	.05
MAR					
11...	1000	.5	.31	27	.02
APR					
14...	1030	14.0	.25	87	.06
MAY					
11...	1300	13.0	.30	37	.03
JUN					
09...	1300	26.0	.05	36	.01
JUL					
14...	1015	22.0	.02	167	.01

06308160 PUMPKIN CREEK NEAR LOESCH, MT--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
DEC					
10...	1315	.0	.10	41	.01
FEB					
24...	1230	.0	1.7	12	.06
MAR					
10...	1520	.0	4.6	12	.15
APR					
15...	0930	14.0	2.0	15	.08
MAY					
11...	1000	16.0	3.0	74	.60
JUN					
09...	1430	27.0	.02	177	.01

06308170 LITTLE PUMPKIN CREEK NEAR VOLBORG, MT

LOCATION.--Lat 45°46'00", long 105°46'42", in NE¼SE¼NE¼ sec.10, T.1 S., R.48 E., Powder River County, Hydrologic Unit 10090102, at county bridge 1.1 mi (1.8 km) upstream from Horkan Creek, 6.9 mi (11.1 km) southwest of Volborg, and 7.7 mi (12.4 km) upstream from mouth.

DRAINAGE AREA.--86.9 mi^2 (225.0 km^2).

PERIOD OF RECORD.--October 1975 to September 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
FEB												
12...	1330	.42	3630	7.8	5.0	1.0	4	5.1	40	1.4	1300	720
MAR												
11...	0900	.40	3410	8.0	-2.0	.5	1	8.2	64	1.1	1200	720
JUN												
09...	1150	.05	3720	8.1	24.5	26.0	3	9.3	129	3.2	1400	750

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
FEB											
12...	140	220	440	5.4	25	648	0	1700	12	.5	12
MAR											
11...	130	220	400	5.0	22	624	0	1600	10	.6	11
JUN											
09...	130	250	500	5.9	30	732	0	1800	12	.5	9.7

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)
FEB											
12...	2870	3.90	3.25	.01	.01	1.2	1.2	1.2	.09	500	70
MAR											
11...	2700	3.67	2.92	.01	.04	.76	.80	.81	.04	490	70
JUN											
09...	3090	4.20	.42	.02	.09	1.2	1.3	1.3	.07	900	50

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
FEB					
12...	1330	1.0	.42	4	.00
MAR					
11...	0900	.5	.40	14	.02
JUN					
09...	1150	26.0	.05	56	.01

06308190 PUMPKIN CREEK NEAR VOLBORG, MT

LOCATION.--Lat 45°51'50", long 105°40'10", in W½ sec.5, T.1 N., R.49 E., Custer County, Hydrologic Unit 10090102, at bridge on U.S. Highway 212, 1.5 mi (2.4 km) upstream from Basin Creek and 1.6 mi (2.6 km) northeast of Volborg.

DRAINAGE AREA.--386 mi^2 (1,000 km^2).

PERIOD OF RECORD.--October 1975 to September 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
DEC												
10...	1315	.10	7000	8.0	1.0	.0	2	8.3	63	.5	1700	940
FEB												
24...	1230	1.7	3880	8.0	15.0	.0	4	8.9	68	2.6	1100	630
MAR												
10...	1520	4.6	4100	8.1	13.0	.0	3	12.4	95	2.0	1100	650
APR												
15...	0930	2.0	4850	8.0	19.0	14.0	3	7.5	81	1.7	1200	710
MAY												
11...	1000	3.0	5300	8.4	21.0	16.0	9	7.4	83	1.5	1400	840
JUN												
09...	1430	.02	5400	8.2	27.0	27.0	10	8.2	115	1.7	1300	870

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
DEC											
10...	230	280	1300	14	21	961	0	3600	26	.6	13
FEB											
24...	150	170	540	7.2	17	544	0	1800	23	.3	9.4
MAR											
10...	150	180	630	8.2	15	572	0	2000	12	.4	8.1
APR											
15...	150	210	770	9.5	17	650	0	2200	14	.4	2.6
MAY											
11...	170	240	840	9.7	20	702	0	2600	15	.5	4.7
JUN											
09...	90	250	880	11	17	464	0	3100	15	.4	.5

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)
DEC											
10...	5950	8.09	1.61	.03	.04	1.2	1.2	1.2	.02	960	60
FEB											
24...	2980	4.05	13.7	.01	.02	1.1	1.1	1.1	.03	540	70
MAR											
10...	3280	4.46	40.7	.01	.04	.92	.96	.97	.05	520	90
APR											
15...	3690	5.02	20.3	.00	.02	.98	1.0	1.0	.14	450	70
MAY											
11...	4240	5.77	34.3	.02	.02	1.2	1.2	1.2	.07	640	40
JUN											
09...	4580	6.23	.25	.21	.03	1.1	1.1	1.3	.04	880	10

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
APR								
15...	0930	50	1	0	<10	10	10	380

DATE	TOTAL LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL MOLYBDENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)
APR								
15...	<100	100	150	.0	4	50	0	0

06308400 PUMPKIN CREEK NEAR MILES CITY, MT

LOCATION.--Lat 46°13'42", long 105°41'24", in SE¼NW¼SW¼ sec.35, T.6 N., R.48 E., Custer County, Hydrologic Unit 10090102, on right bank 30 ft (9 m) upstream from bridge on U.S. Highway 312, 7.5 mi (12.1 km) upstream from mouth, and 16 mi (26 km) southeast of Miles City.

DRAINAGE AREA.--697 mi^2 (1,805 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,490 ft (760 m), from topographic map.

REMARKS.--Water-discharge records fair except those for winter period, which are poor. No gage-height record Nov. 8 to Dec. 9 and Dec. 18 to Jan. 13. Diversions for irrigation of about 3,600 acres (14.5 km^2) above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,890 ft^3/s (81.8 m^3/s) May 6, 1975, gage height, 12.27 ft (3.740 m), from rating curve extended above 1,400 ft^3/s (39.6 m^3/s), gage height, 9.60 ft (2.926 m), on basis of slope-area measurement of peak flow; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft^3/s (2.83 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 13	--	300	8.50	a		May 5	2030	*492	13.9	*5.82	1.774
Apr. 17	1430	119	3.37	3.53	1.076	May 13	0130	126	3.57	3.55	1.082
Apr. 29	1400	138	3.91	3.73	1.137	June 15	1230	241	6.83	4.31	1.314

a - discharge determined by measurement; gage height affected by ice jams.

No flow on many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.43	0	.10	120	7.4	.53	60	1.2	1.4		
2	0	.75	0	.10	130	6.4	.54	32	1.1	.91		
3	0	.68	0	.10	125	5.4	.62	19	.95	.75		
4	0	.47	.03	.10	122	4.7	.57	15	.79	.60		
5	0	.25	.10	0	120	4.2	.51	161	9.7	.55		
6	0	.18	.20	0	118	3.8	.50	220	2.6	9.5		
7	0	.18	.25	0	113	3.4	.47	89	2.3	18		
8	0	.13	.40	0	110	3.1	.49	43	5.5	.83		
9	0	.10	.50	0	140	9.0	.45	21	3.7	.53		
10	.62	.04	.57	0	170	23	.42	11	1.1	.73		
11	.42	.10	.50	.10	200	18	.42	7.8	.69	.75		
12	.35	.05	.40	.20	220	14	.42	23	.57	.49		
13	.25	.01	.30	.30	255	7.5	.40	65	.61	.35		
14	.39	0	.30	.35	260	3.8	.55	41	14	.14		
15	.39	0	.30	.38	240	2.8	3.1	40	151	.05		
16	.51	0	.30	.40	220	2.1	3.0	29	50	0		
17	.39	0	.30	.40	166	3.0	66	18	40	0		
18	.25	0	.30	.40	157	6.2	47	11	75	0		
19	.18	0	.30	.40	83	8.9	20	7.2	43	0		
20	.13	0	.30	.40	56	5.1	18	4.5	24	0		
21	.51	0	.30	1.0	43	2.6	11	3.7	14	0		
22	1.9	0	.30	2.2	32	2.2	4.3	3.0	7.6	0		
23	19	0	.30	3.0	29	1.5	1.9	2.2	6.6	0		
24	6.0	0	.30	5.0	37	1.2	2.6	2.0	11	0		
25	1.3	0	.30	6.4	33	1.2	1.5	1.7	10	0		
26	.82	0	.30	7.8	36	1.1	.96	1.6	5.4	0		
27	.75	0	.20	5.0	34	.97	.89	1.5	2.5	0		
28	.75	0	.10	4.3	22	.88	19	4.1	2.5	0		
29	.62	0	.10	5.5	21	.80	105	2.2	3.3	0		
30	.47	0	.10	12	---	.71	111	1.8	2.3	0		
31	.43	---	.10	40	---	.64	---	1.6	---	0		---
TOTAL	36.43	3.37	7.75	95.93	3412	155.60	422.14	942.9	493.21	35.58	0	0
MEAN	1.18	.11	.25	3.09	118	5.02	14.1	30.4	16.4	1.15	0	0
MAX	19	.75	.57	40	260	23	111	220	151	18	0	0
MIN	0	0	0	0	21	.64	.40	1.5	.57	0	0	0
AC-FT	72	6.7	15	190	6770	309	837	1870	978	71	0	0

CAL YR 1975 TOTAL 12227.19 MEAN 33.5 MAX 1880 MIN 0 AC-FT 24250
WTR YR 1976 TOTAL 5604.91 MEAN 15.3 MAX 260 MIN 0 AC-FT 11120

06308400 PUMPKIN CREEK NEAR MILES CITY, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1975 to September 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
15...	1215	.35	3850	8.1	12.5	6.0	10	9.6	84	4.7	410	70
NOV												
12...	1510	.05	3160	8.0	5.5	3.0	7	12.4	102	1.4	350	0
DEC												
10...	1000	.56	3850	8.4	-.5	.5	10	11.7	89	.6	500	0
JAN												
14...	1000	.31	4120	8.2	-8.0	.0	10	10.9	82	3.1	620	0
FEB												
13...	1000	255	195	7.8	1.0	.0	250	8.6	65	9.8	36	0
MAR												
10...	1300	23	800	7.8	7.0	.0	410	12.0	90	4.8	120	0
APR												
15...	1230	2.1	2530	8.5	22.0	18.0	15	8.9	102	1.9	450	64
MAY												
12...	0930	8.5	1410	8.3	14.0	10.0	170	9.4	91	2.5	270	64
JUN												
07...	1430	1.5	2750	8.3	27.5	28.5	30	7.9	111	2.4	500	120
JUL												
12...	1400	.49	940	8.4	30.5	29.5	100	7.3	106	2.6	120	0

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
OCT											
15...	64	60	610	13	13	411	0	1400	11	.5	1.8
NOV											
12...	59	50	610	14	11	534	15	1200	9.5	.6	3.3
DEC											
10...	90	68	790	15	12	672	28	1500	11	.5	6.1
JAN											
14...	100	89	830	15	15	876	0	1700	13	.4	9.4
FEB											
13...	8.7	3.5	26	1.9	4.7	67	0	38	1.8	.2	3.4
MAR											
10...	25	15	120	4.7	4.6	178	0	250	2.5	.3	4.8
APR											
15...	71	65	420	8.7	10	430	17	930	7.4	.3	1.1
MAY											
12...	49	37	220	5.8	8.9	257	0	550	4.6	.3	8.1
JUN											
07...	79	74	460	8.9	12	466	0	1200	9.0	.4	4.9
JUL											
12...	28	12	160	6.4	8.8	260	0	260	3.2	.5	11

06308400 PUMPKIN CREEK NEAR MILES CITY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT											
15...	2360	3.21	2.23	.02	.00	1.1	1.1	1.1	.04	450	50
NOV											
12...	2220	3.02	.30	.35	.00	1.6	1.6	2.0	.00	500	30
DEC											
10...	2840	3.86	4.29	.37	.06	1.0	1.1	1.5	.02	450	20
JAN											
14...	3190	4.34	2.67	.19	.04	1.1	1.1	1.3	.02	470	110
FEB											
13...	120	.16	82.6	.08	.10	2.2	2.3	2.4	.02	150	150
MAR											
10...	510	.69	31.8	.24	.11	2.5	2.6	2.8	.43	180	110
APR											
15...	1730	2.35	9.81	.00	.04	.61	.65	.65	.07	230	20
MAY											
12...	1000	1.36	23.0	.04	.04	1.6	1.6	1.6	.15	210	70
JUN											
07...	2070	2.82	8.38	.02	.06	.82	.88	.90	.07	150	0
JUL											
12...	612	.83	.81	.02	.05	1.1	1.1	1.1	.25	240	90

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BISMUTH (BI) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)
OCT											
15...	1215	520	--	1	--	--	10	--	--	20	--
NOV											
12...	1510	230	20	1	1	90	10	10	<13	0	0
JAN											
14...	1000	440	--	1	--	--	0	--	--	<10	--
APR											
15...	1230	420	--	1	--	--	0	--	--	<10	--
JUL											
12...	1400	4500	--	11	--	--	0	--	--	<10	--

DATE	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED GALLIUM (GA) (UG/L)	DIS-SOLVED GER-MANIUM (GE) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)
OCT										
15...	10	--	--	20	--	--	--	1800	<100	--
NOV										
12...	10	2	<13	10	10	<6	<20	150	200	0
JAN										
14...	0	--	--	10	--	--	--	370	<100	--
APR										
15...	0	--	--	10	--	--	--	500	<100	--
JUL										
12...	10	--	--	20	--	--	--	4200	<100	--

DATE	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)
OCT										
15...	40	--	70	--	.2	--	2	--	100	--
NOV										
12...	40	30	40	10	.2	.2	5	0	50	9
JAN										
14...	60	--	120	--	.2	--	1	--	<50	--
APR										
15...	40	--	80	--	.0	--	2	--	<50	--
JUL										
12...	30	--	110	--	.0	--	2	--	<50	--

06308400 PUMPKIN CREEK NEAR MILES CITY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED STRON-TIUM (SR) (UG/L)	DIS-SOLVED TIN (SN) (UG/L)	DIS-SOLVED TI-TANIUM (TI) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	DIS-SOLVED ZIR-CONIUM (ZR) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
15...	1	--	--	--	--	--	--	--	40	--
NOV										
12...	3	4	<2	1100	<13	<9	1.7	<30	10	20
JAN										
14...	1	--	--	--	--	--	--	--	20	--
APR										
15...	0	--	--	--	--	--	--	--	0	--
JUL										
12...	1	--	--	--	--	--	--	--	40	--

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	DIS-SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS-PENDED GROSS ALPHA AS U-NAT. (UG/L)	DIS-SOLVED GROSS BETA AS CS-137 (PC/L)	SUS-PENDED GROSS BETA AS CS-137 (PC/L)	DIS-SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS-PENDED GROSS BETA AS SR90 /Y90 (PC/L)	DIS-SOLVED RA-226 (RADON METHOD) (PC/L)	DIS-SOLVED URANIUM (DIRECT FLUORO-METRIC) (PC/L)	TOTAL FILT-RABLE RESIDUE (MG/L)	TOTAL NON-FILT-RABLE RESIDUE (MG/L)
NOV											
12...	1510	79	<.4	59	3.3	50	2.9	.12	17	2500	9

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
OCT					
15...	1215	6.0	.35	21	.02
NOV					
12...	1510	3.0	.05	26	.00
DEC					
10...	1000	.5	.56	21	.03
JAN					
14...	1000	.0	.31	96	.08
FEB					
13...	1000	.0	255	563	388
MAR					
10...	1300	.0	23	986	61
APR					
15...	1230	18.0	2.1	47	.27
MAY					
12...	0930	10.0	8.5	416	9.5
JUN					
07...	1430	28.5	1.5	55	.22
JUL					
12...	1400	29.5	.49	203	.27

06308500 TONGUE RIVER AT MILES CITY, MT

LOCATION.--Lat 46°21'30", long 105°48'24", in SE¼ sec.23, T.7 N., R.47 E., Custer County, Hydrologic Unit 10090102, on right bank 4 mi (6 km) south of Miles City and 8 mi (13 km) upstream from mouth.

DRAINAGE AREA.--5,379 mi^2 (13,932 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1938 to April 1942, April 1946 to current year. Published as "near Miles City" April 1938 to April 1942. Not equivalent to records published as "near Miles City" May 1929 to October 1932. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 2,370 ft (722 m), by barometer. April 1938 to April 1942, nonrecording gage at site 8 mi (12.9 km) upstream at different datum. April 1946 to Sept. 30, 1963, at datum 1.00 ft (0.30 m) higher.

REMARKS.--Water-discharge records good except those for period of October to March, which are poor. Flow regulated by Tongue River Reservoir (see p.582), and many small reservoirs in Wyoming (combined capacity, about 15,000 acre-ft, 18.5 hm^3). Diversions for irrigation of about 90,000 acres (364 km^2) above station.

AVERAGE DISCHARGE.--33 years (1938-41, 1946-76), 441 ft^3/s (12.49 m^3/s), 319,500 acre-ft/yr (394 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,300 ft^3/s (377 m^3/s) June 15, 1962, gage height, 12.33 ft (3.758 m), present datum, from rating curve extended above 5,200 ft^3/s (147 m^3/s) on basis of float measurement; maximum gage height, 13.27 ft (4.045 m), present datum, Mar. 19, 1960, Feb. 15, 1971 (ice jam); no flow July 9-19, Aug. 13, 14, Sept. 28, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,880 ft^3/s (53.2 m^3/s) June 15, gage height, 4.50 ft (1.372 m); maximum gage height, 4.55 ft (1.387 m) Feb. 13 (backwater from ice); minimum daily discharge, 35 ft^3/s (0.99 m^3/s) Nov. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	175	218	45	350	360	340	372	586	578	1070	281	152
2	180	218	50	340	380	320	372	524	590	862	277	161
3	180	215	60	325	320	300	376	503	629	1050	320	191
4	185	206	70	315	290	290	372	499	737	847	304	191
5	190	185	95	300	285	290	372	810	843	697	296	197
6	195	150	190	280	280	350	368	1010	862	620	285	191
7	195	139	180	270	280	430	368	719	1030	586	259	208
8	202	125	190	270	280	480	368	536	990	612	277	212
9	212	120	220	280	285	520	364	483	1100	586	259	222
10	209	115	240	290	320	450	364	460	1240	557	252	209
11	206	140	280	300	350	420	348	448	1390	491	248	171
12	206	160	300	310	400	400	372	499	1550	412	212	191
13	202	180	290	320	530	390	372	638	1590	364	212	248
14	200	170	280	330	510	440	388	612	1630	352	228	259
15	190	170	270	330	500	470	392	616	1780	328	218	308
16	190	170	260	330	470	490	392	603	1530	308	224	262
17	206	140	255	330	470	510	499	586	1420	316	248	262
18	218	120	240	330	470	540	491	586	1440	300	274	256
19	215	90	250	330	460	448	436	586	1400	277	281	238
20	218	60	270	340	450	428	408	582	1360	281	235	242
21	235	40	290	350	430	380	396	573	1370	289	225	245
22	250	50	300	350	420	364	384	565	1370	256	231	245
23	257	60	310	340	420	356	376	565	1390	252	215	248
24	246	75	320	330	420	348	408	569	1390	242	228	252
25	232	85	310	330	415	344	412	573	1370	231	263	248
26	228	75	320	310	400	340	412	573	1350	245	281	238
27	225	60	320	290	370	372	440	561	1350	235	285	235
28	218	50	330	280	360	380	625	552	1340	179	292	238
29	218	45	340	265	350	376	647	540	1330	152	285	235
30	218	35	350	280	---	376	665	540	1200	235	197	248
31	218	---	360	310	---	376	---	536	---	270	156	---
TOTAL	6519	3666	7585	9705	11275	12318	12559	18033	37209	13502	7848	6801
MEAN	210	122	245	313	389	397	419	582	1240	436	253	227
MAX	257	218	360	350	530	540	665	1010	1780	1070	320	308
MIN	175	35	45	265	280	290	348	448	578	152	156	152
AC-FT	12930	7270	15040	19250	22360	24430	24910	35770	73800	26780	15570	13490

CAL YR 1975 TOTAL 328525 MEAN 900 MAX 7010 MIN 35 AC-FT 651600
WTR YR 1976 TOTAL 147020 MEAN 402 MAX 1780 MIN 35 AC-FT 291600

06308500 TONGUE RIVER AT MILES CITY, MT--Continued
(National Stream Quality Accounting Network)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946 to current year.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1951 to current year.
WATER TEMPERATURES: April 1949 to current year.
INSTRUMENTATION.--Temperature recorder April to July 1974.
REMARKS.--Flow regulated by reservoirs and diversions for irrigation upstream from station. Interruptions in record were due to absence of observer.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,390 micromhos Sept. 11, 1958; minimum daily, 215 micromhos Feb. 16, 1971.
WATER TEMPERATURES: Maximum daily, 30.0°C July 20, 1954; minimum daily, 0.0°C on many days during winter periods.
EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,530 micromhos on several days during November; minimum daily, 366 micromhos June 21.
WATER TEMPERATURES: Maximum daily, 27.5°C July 9; minimum daily, 0.0°C on several days during November to March.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	FECAL COLIFORM (COL. PER 100 ML)	FECAL STREPTOCOCCI KF AGAR (COL. PER 100 ML)
OCT											
21...	1445	231	1020	8.4	6.0	8.5	130	11.6	107	95	320
NOV											
12...	1530	171	1300	8.3	5.0	.0	20	13.2	99	--	--
19...	1000	90	1320	8.4	-4.0	.0	2	12.9	96	1	4
DEC											
17...	1500	255	1110	8.1	-18.0	.0	7	13.1	98	4	35
JAN											
29...	1420	265	1040	8.0	9.5	.0	9	13.0	97	1	93
FEB											
25...	1000	415	925	8.3	6.0	.0	40	13.0	97	17	65
MAR											
17...	1245	510	956	8.3	13.0	1.5	45	12.7	99	3	18
APR											
29...	1030	647	815	8.2	6.5	6.5	640	11.0	97	550	1000
MAY											
18...	1400	586	900	8.5	22.0	18.5	45	9.2	106	51	120
JUN											
16...	0900	1530	440	7.7	16.0	18.0	750	8.4	95	9300	4800
JUL											
21...	1415	289	510	8.2	31.5	27.0	25	7.9	110	53	63
AUG											
18...	1340	274	692	8.1	25.0	22.0	8	8.4	105	39	160
SEP											
22...	1230	245	740	8.3	24.5	16.5	10	8.8	97	68	40

06308500 TONGUE RIVER AT MILES CITY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)
OCT											
21...	380	140	62	54	110	2.5	5.6	281	5	1.9	360
NOV											
12...	450	150	83	60	120	2.5	6.4	369	0	3.0	410
19...	450	150	78	61	130	2.7	6.7	366	0	2.3	440
DEC											
17...	450	140	82	59	74	1.5	5.2	373	0	4.7	290
JAN											
29...	440	140	80	58	77	1.6	5.0	360	0	5.8	310
FEB											
25...	360	120	65	49	68	1.6	4.7	299	0	2.4	260
MAR											
17...	400	140	73	53	72	1.6	5.3	323	0	2.6	290
APR											
29...	260	50	51	33	110	3.0	4.8	260	0	2.6	280
MAY											
18...	390	160	66	54	64	1.4	4.7	280	0	1.4	280
JUN											
16...	170	27	40	17	37	1.2	2.9	174	0	5.6	89
JUL											
21...	230	54	47	27	46	1.3	3.6	213	0	2.2	150
AUG											
18...	280	80	58	32	45	1.2	4.3	240	0	3.1	150
SEP											
22...	300	96	54	41	55	1.4	4.5	253	0	2.0	210

DATE	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT											
21...	5.9	.3	6.3	694	.94	433	.05	.62	.67	.18	6.8
NOV											
12...	6.3	.4	7.8	--	1.19	404	.09	.73	.82	.00	--
19...	6.9	.3	8.9	895	1.22	217	.08	.45	.53	.00	--
DEC											
17...	4.9	.3	4.0	747	1.02	514	.04	.47	.51	.00	--
JAN											
29...	5.8	.4	3.5	731	.99	523	.08	.48	.56	.02	3.5
FEB											
25...	4.5	.3	2.8	632	.86	708	.04	.20	.24	.06	--
MAR											
17...	8.7	.4	4.0	707	.96	974	.04	.76	.80	.07	--
APR											
29...	3.8	.3	3.6	595	.81	1040	.21	2.5	2.7	.67	22
MAY											
18...	4.5	.3	.5	639	.87	1010	.02	.65	.67	.12	--
JUN											
16...	2.0	.2	6.9	294	.40	1220	.26	1.4	1.7	.61	--
JUL											
21...	2.5	.3	6.9	367	.50	286	.02	.22	.24	.06	--
AUG											
18...	3.1	.3	5.1	415	.56	307	.02	.38	.40	.03	--
SEP											
22...	4.3	.3	5.8	484	.66	320	.02	.38	.40	.04	--

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	DISSOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)
OCT								
21...	1445	--	--	2	1	0	0	60
NOV								
12...	1530	350	20	1	0	<10	1	10
JAN								
29...	1420	--	--	0	0	<10	0	0
APR								
29...	1030	--	--	15	0	10	1	40
JUL								
21...	1415	--	--	1	1	<10	1	10

06308500 TONGUE RIVER AT MILES CITY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)
OCT									
21...	0	50	0	20	2	4900	50	0	3
NOV									
12...	0	--	<10	10	2	680	0	<10	5
JAN									
29...	0	<50	0	10	1	220	10	<100	1
APR									
29...	0	<50	0	60	4	31000	10	<100	6
JUL									
21...	0	<50	0	<10	2	1200	10	<100	7

DATE	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT								
21...	90	10	.0	.0	0	0	30	10
NOV								
12...	40	20	.0	.0	0	1	30	20
JAN								
29...	10	0	.1	.0	1	1	20	10
APR								
29...	570	0	.1	.0	2	1	240	10
JUL								
21...	60	10	.0	.0	0	0	10	0

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	999	1530				---	1040	908	748	428	542	666
2	1010	1530				---	1040	936	629	426	547	702
3	1080	1530				---	1040	936	627	429	539	692
4	1070	1520				---	1020	941	590	519	535	692
5	1080	1520				---	1030	820	595	491	550	688
6	1090	1530				1100	1030	828	596	550	562	702
7	1070	1520				1100	1040	900	565	750	564	708
8	1060	1510				1100	1050	903	508	486	560	702
9	1060	1510				1040	1040	942	494	461	569	700
10	1080	1520				1040	1040	941	486	464	565	699
11	1080	1520				1050	1040	919	431	456	574	700
12	1090	1520				874	1030	901	397	489	498	714
13	1080	1530				945	1030	903	398	536	597	712
14	1080	1510				950	985	909	397	540	610	705
15	1080	1490				948	1000	910	410	549	629	718
16	1070	1510				948	1000	910	521	559	620	700
17	1080	1510				960	992	908	452	552	621	691
18	1080	1520				967	992	910	460	559	612	700
19	1080	1530				967	1060	911	417	551	618	721
20	1080	1520				967	1060	943	416	549	612	728
21	1080	1520				1010	1040	950	366	549	609	733
22	1080	1520				1040	991	945	389	569	608	739
23	1080	1520				1040	990	864	392	565	611	741
24	1080	1520				1090	980	865	398	568	610	741
25	1080	1490				1070	980	832	396	562	615	742
26	1080	1520				1070	969	833	396	559	616	728
27	1080	1520				1070	968	836	387	560	616	729
28	1080	1520				1070	831	819	382	572	615	728
29	1080	1520				1060	830	817	393	598	620	736
30	1080	1520				1060	893	819	388	618	679	733
31	1090	---				1040	---	758	---	573	677	---
MONTH	1070	1520				1020	1000	888	467	536	594	713

06308500 TONGUE RIVER AT MILES CITY, MT--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.0	11.0			---	0.5	7.5	8.0	21.0	23.0	21.5	18.5
2	12.0	10.5			---	0.0	6.5	10.5	22.5	23.5	22.0	17.0
3	11.5	12.0			---	0.5	6.0	11.5	23.0	24.5	22.5	16.0
4	12.0	11.0			---	0.0	7.0	13.0	23.5	24.5	23.5	19.5
5	11.0	10.0			---	0.0	8.0	14.5	23.0	25.0	22.0	20.0
6	10.5	11.0			---	0.0	10.0	14.0	23.0	25.5	23.0	19.0
7	11.0	11.0			---	0.0	11.0	13.5	24.0	25.5	22.0	18.5
8	12.0	10.5			---	0.5	12.0	14.5	24.5	25.0	22.5	17.0
9	13.0	9.0			---	0.5	13.0	16.0	24.5	27.5	22.0	16.0
10	13.5	8.5			---	0.5	11.0	18.0	24.0	26.0	21.0	17.5
11	11.0	9.0			---	0.5	10.5	17.0	24.0	26.0	22.0	18.0
12	12.5	8.0			1.0	0.5	12.5	12.5	23.0	25.5	22.0	17.0
13	11.5	8.0			1.0	0.5	13.0	14.5	21.5	27.0	23.0	17.0
14	10.5	9.0			0.0	0.5	15.0	15.0	18.5	26.0	22.5	18.0
15	10.0	8.5			0.5	0.5	14.0	14.5	18.0	24.5	21.0	20.0
16	10.0	5.0			0.5	0.5	14.0	16.0	18.5	22.5	22.0	20.0
17	11.0	4.0			0.5	0.5	8.0	17.0	18.0	23.5	22.0	19.5
18	12.0	4.0			0.5	0.5	7.5	17.5	16.0	25.0	22.5	20.0
19	12.0	5.0			0.5	2.0	10.5	18.5	20.0	24.5	22.0	17.0
20	11.0	4.5			0.0	4.0	10.0	18.5	22.5	23.5	21.5	15.0
21	9.5	5.0			0.0	5.0	11.0	18.0	23.5	24.0	22.0	16.5
22	9.0	5.0			0.0	3.0	11.0	17.5	22.5	26.5	22.0	16.5
23	10.0	3.0			0.5	5.0	11.0	17.0	22.0	26.0	22.0	17.0
24	10.0	3.5			0.5	7.0	10.5	16.5	21.0	26.5	22.0	17.0
25	10.0	4.0			0.5	8.0	10.0	17.0	17.5	27.0	21.5	16.5
26	10.0	3.5			0.5	8.0	11.0	18.0	17.0	24.5	20.0	16.5
27	9.0	3.0			0.5	7.0	10.5	19.0	18.5	25.0	19.5	14.5
28	10.0	2.0			0.5	7.0	6.0	22.0	19.0	19.0	19.0	13.5
29	9.5	2.0			0.5	5.5	5.5	20.5	20.5	23.0	19.5	15.5
30	10.5	0.0			---	6.0	7.5	19.5	22.0	21.5	19.0	16.5
31	10.0	---			---	7.0	---	20.0	---	23.0	19.0	---
MONTH	11.0	6.5			---	2.5	10.0	16.0	21.0	24.5	21.5	17.5
YEAR	MAX	27.5	MIN	0.0	MEAN	13.5						

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .062 MM
OCT						
21...	1445	8.5	231	294	183	95
NOV						
12...	1530	.0	171	102	47	88
19...	1000	.0	90	11	2.7	53
DEC						
17...	1500	.0	255	39	27	58
JAN						
29...	1420	.0	265	109	78	30
FEB						
25...	1000	.0	415	89	100	92
MAR						
17...	1245	1.5	510	279	384	53
APR						
29...	1030	6.5	647	1960	3420	91
MAY						
18...	1400	18.5	586	171	271	78
JUN						
16...	0900	18.0	1530	1740	7190	90
JUL						
21...	1415	27.0	289	54	42	68
AUG						
18...	1340	22.0	274	29	21	80
SEP						
22...	1230	16.5	245	40	26	93

06308500 TONGUE RIVER AT MILES CITY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON

Date	Length of exposure (days)	Biomass (g/m^2) Dry weight	Biomass (g/m^2) Ash weight	Chlorophyll a (mg/m^2)	Chlorophyll b (mg/m^2)	Biomass pigment ratio	Sampling method
Oct 21	27	.400	.100	.300	.000	860	Polyethylene strip
Apr 29	43	71.0	67.7	3.61	.044	910	
Jul 21	35	5.08	4.00	1.71	.071	630	

PHYTOPLANKTON

OCT. 21, 1975
1445 HOURS
1,500 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...SCENEDESMACEAE				
	....SCENEDESMUS		95	6	
		TOTALS	95	6	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		140	9	
	...CYMBELLACEAE				
L	....CYMBELLA			0	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		95	6	
	....NEIDIUM		47	3	
	...NITZSCHIACEAE				
D	....NITZSCHIA		1,100	75	
		TOTALS	1,400	93	1.014=DIVERSITY

NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:

PHYL/DIV	0.337
CLASS	0.337
ORDER	0.337
FAMILY	1.202
GENERA	1.288

NOV. 19, 1975
1000 HOURS
280 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		8	3	
	..ZYGNEMATALES				
	...DESMIDIACEAE	PLACODERM DESMIDS			
L	....CLOSTERIUM			0	
		TOTALS	8	3	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		8	3	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
D	....ACHNANTHES		46	17	
	...CYMBELLACEAE				
L	....CYMBELLA			0	
	...DIATOMACEAE				
	....DIATOMA		8	3	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		39	14	
	...NITZSCHIACEAE				
D	....NITZSCHIA		150	53	
		TOTALS	250	90	1.630=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
	....TRACHELOMONAS		23	8	
		TOTALS	23	8	0.000=DIVERSITY

PHYL/DIV	0.593
CLASS	0.593
ORDER	0.772
FAMILY	2.043
GENERA	2.043

06308500 TONGUE RIVER AT MILES CITY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
DEC. 17, 1975
1500 HOURS
500 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		150	30	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		45	9	
L	....COCCONEIS			0	
	...DIATOMACEAE				
	....DIATOMA		15	3	
	...FRAGILARIACEAE				
	....SYNEDRA		45	9	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		45	9	
	...NAVICULACEAE	NAVICULOID			
L	....CALONEIS			0	
	....NAVICULA		61	12	
	...NITZSCHIACEAE				
D	....NITZSCHIA		140	27	
	...SURIRELLACEAE				
L	....SURIRELLA			0	
		TOTALS	500	99	2.499=DIVERSITY

DRDER 0.895
FAMILY 2.499
GENERA 2.499

JAN. 29, 1976
1420 HOURS
450 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		15	3	
		TOTALS	15	3	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
L	....CYCLOTELLA			0	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		15	3	
L	....COCCONEIS			0	
	...CYMBELLACEAE				
L	....CYMBELLA			0	
	...DIATOMACEAE				
D	....DIATOMA		75	17	
	...FRAGILARIACEAE				
D	....SYNEDRA		200	43	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		60	13	
	...NAVICULACEAE	NAVICULOID			
	....CALONEIS		15	3	
	....NAVICULA		15	3	
L	....NEIDIUM			0	
	...NITZSCHIACEAE				
	....NITZSCHIA		60	13	
		TOTALS	440	95	2.247=DIVERSITY

PHYL/DIV 0.211
CLASS 0.211
DRDER 0.211
FAMILY 2.316
GENERA 2.383

YELLOWSTONE RIVER BASIN
06308500 TONGUE RIVER AT MILES CITY, MT--Continued
QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
PHYTOPLANKTON

FEB. 25, 1976
1000 HOURS
1,500 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		110	8	
		TOTALS	110	8	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		520	35	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		86	6	
L	....COCCONEIS			0	
	...CYMBELLACEAE				
L	....CYMBELLA			0	
	...DIATOMACEAE				
	....DIATOMA		29	2	
	...FRAGILARIACEAE				
D	....SYNEDRA		320	22	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		29	2	
	...NAVICULACEAE	NAVICULOID			
	....AMPHIPLEURA		57	4	
	....NAVICULA		110	8	
L	....PINNULARIA			0	
	...NITZSCHIACEAE				
	....NITZSCHIA		200	14	
		TOTALS	1,400	93	2.416=DIVERSITY

PHYL/DIV 0.397
CLASS 0.397
ORDER 1.281
FAMILY 2.515
GENERA 2.623

MAR. 17, 1976
1245 HOURS
4,900 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....KIRCHNERIELLA		85	2	
	...SCENEDESMACEAE				
L	....SCENEDESMUS			0	
		TOTALS	85	2	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		2,300	47	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		85	2	
L	....COCCONEIS			0	
	...CYMBELLACEAE				
L	....CYMBELLA			0	
	...DIATOMACEAE				
	....DIATOMA		340	7	
	...FRAGILARIACEAE				
	....FRAGILARIA		170	3	
D	....SYNEDRA		850	17	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		250	5	
	...NAVICULACEAE	NAVICULOID			
	....AMPHIPLEURA		85	2	
L	....CALONEIS			0	
	....GYROSIGMA		85	2	
	....NAVICULA		170	3	
	...NITZSCHIACEAE				
	....NITZSCHIA		510	10	
		TOTALS	4,800	98	2.432=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
L	....OSCILLATORIA			0	
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
L	....TRACHELOMONAS			0	

PHYL/DIV 0.126
CLASS 0.126
ORDER 1.106
FAMILY 2.278
GENERA 2.515

06308500 TONGUE RIVER AT MILES CITY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

APR. 29, 1976
1030 HOURS
3,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		560	19	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		280	10	
	....COCCONEIS		140	5	
	...DIATOMACEAE				
	....DIATOMA		140	5	
	...FRAGILARIACEAE				
	....SYNEDRA		420	14	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		140	5	
	...NAVICULACEAE	NAVICULOID			
	....GYROSIGMA		140	5	
	....NAVICULA		140	5	
	...NITZSCHIACEAE				
D	....NITZSCHIA		990	33	
		TOTALS	3,000	101	2.754=DIVERSITY

ORDER 0.702
FAMILY 2.527
GENERA 2.754

MAY 18, 1976
1400 HOURS
16,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		1,400	9	
	...SCENEDESMACEAE				
	....SCENEDESMUS		630	4	
		TOTALS	2,100	13	0.890=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		13,000	76	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		160	1	
	...CYMBELLACEAE				
	....CYMBELLA		160	1	
	...FRAGILARIACEAE				
	....SYNEDRA		470	3	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		320	2	
	...NITZSCHIACEAE				
	....NITZSCHIA		470	3	
		TOTALS	14,000	86	0.751=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
	....TRACHELOMONAS		320	2	
		TOTALS	320	2	0.000=DIVERSITY

PHYL/DIV 0.677
CLASS 0.677
ORDER 1.111
FAMILY 1.431
GENERA 1.431

06308500 TONGUE RIVER AT MILES CITY, MT--Continued
QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
PHYTOPLANKTON

JUNE 16, 1976
0900 HOURS
1,900 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
L	....RHOICOSPHENIA			0	
	...CYMBELLACEAE				
L	....CYMBELLA			0	
	...FRAGILARIACEAE				
L	....FRAGILARIA			0	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		470	25	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		470	25	
	...NITZSCHIACEAE				
L	....NITZSCHIA			0	
		TOTALS	940	50	1.000=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..CHROOCOCCALES	COCCOID			
	...CHROOCOCCACEAE				
D	....ANACYSTIS		940	50	
		TOTALS	940	50	0.000=DIVERSITY

PHYL/DIV 1.000
CLASS 1.000
ORDER 1.000
FAMILY 1.500
GENERA 1.500

JULY 21, 1976
1415 HOURS
2,600 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...COELASTRACEAE				
	....COELASTRUM		230	9	
	...HYDRODICTYACEAE				
	....PEDIASTRUM		170	7	
	...OOCYSTACEAE				
	....ANKISTRODESMUS		190	7	
	....KIRCHNERIELLA		29	1	
	....OOCYSTIS		350	14	
	....TETRAEDRON		15	1	
	...SCENEDESMACEAE				
D	....SCENEDESMUS		550	22	
	....TETRASTRUM		120	5	
		TOTALS	1,700	66	2.530=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		450	18	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		29	1	
	...CYMBELLACEAE				
L	....CYMBELLA			0	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		73	3	
	...NITZSCHIACEAE				
	....NITZSCHIA		200	8	
		TOTALS	750	30	1.460=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..CHROOCOCCALES	COCCOID			
	...CHROOCOCCACEAE				
	....ANACYSTIS		120	5	
		TOTALS	120	5	0.000=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.CRYPTOPHYCEAE	CRYPTOMONADS			
	..CRYPTOMONIDALES				
	...CRYPTOMONADACEAE				
	....CRYPTOMONAS		29	1	
		TOTALS	29	1	0.000=DIVERSITY

PHYL/DIV 1.202
CLASS 1.202
ORDER 1.489
FAMILY 2.798
GENERA 3.271

06308500 TONGUE RIVER AT MILES CITY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
AUG. 18, 1976
1340 HOURS
13,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...CHARACIACEAE				
	....SCHROEDERIA		160	1	
	...OOCYSTACEAE				
	....ANKISTRODESMUS		630	5	
	....KIRCHNERIELLA		160	1	
	....OOCYSTIS		470	4	
	....TREUBARIA		160	1	
	....WESTELLA		1,300	10	
	...SCENEDESMACEAE				
	....ACTINASTRUM		630	5	
	....CRUCIGENIA		630	5	
D	....SCENEDESMUS		1,900	15	
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		160	1	
	..ZYGNEMATALES				
	...DESMIDIACEAE	PLACODERM DESMIDS			
	....SPONDYLOSIUM		160	1	
	....STAURASTRUM		160	1	
		TOTALS	6,400	50	3.022=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		4,900	39	
	..PENNALES	PENNATE			
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		160	1	
	...NITZSCHIACEAE				
	....NITZSCHIA		940	7	
		TOTALS	5,900	47	0.798=DIVERSITY
	PYRRHOPHYTA	FIRE ALGAE			
	.DINOPHYCEAE	DINOFLAGELLATES			
	..PERIDINIALES				
	...GLENODINIACEAE				
	....GLENODINIUM		160	1	
		TOTALS	160	1	0.000=DIVERSITY

PHYL/DIV 1.083
CLASS 1.083
ORDER 1.639
FAMILY 2.234
GENERA 3.011

06308500 TONGUE RIVER AT MILES CITY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
SEP. 22, 1976
1230 HOURS
2,600 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...CHARACIACEAE				
	....SCHROEDERIA		29	1	
	...OOCYSTACEAE				
	....ANKISTRODESMUS		59	2	
D	....DICTYOSPHAERIUM		1,100	40	
	....OOCYSTIS		240	9	
	....TETRAEDRON		29	1	
	...SCENEDESMACEAE				
D	....SCENEDESMUS		410	16	
		TOTALS	1,800	69	1.673=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		120	4	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		59	2	
	....COCCONEIS		29	1	
	...CYMBELLACEAE				
L	....EPITHEMIA			0	
	...FRAGILARIACEAE				
	....FRAGILARIA		59	2	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		120	4	
	....PINNULARIA		29	1	
	...NITZSCHIACEAE				
	....NITZSCHIA		240	9	
		TOTALS	650	23	2.459=DIVERSITY
	PYRRHOPHYTA	FIRE ALGAE			
	.DINOPHYCEAE	DINOFLAGELLATES			
	..PERIDINIALES				
	...PERIDINIACEAE				
	....PERIDINIUM		180	7	
		TOTALS	180	7	0.000=DIVERSITY

PHYL/DIV 1.128
CLASS 1.128
ORDER 1.295
FAMILY 2.267
GENERA 2.882

06309000 YELLOWSTONE RIVER AT MILES CITY, MT

LOCATION.--Lat 46°25'16", long 105°51'51", in SW¼NW¼ sec.28, T.8 N., R.47 E., Custer County, Hydrologic Unit 10100001, on left bank 350 ft (107 m) upstream from bridge on State Highway 22 at Miles City, 0.8 mi (1.3 km) downstream from Tongue River, and at mile 180.8 (290.9 km).

DRAINAGE AREA.--48,253 mi² (124,975 km²).

PERIOD OF RECORD.--September 1922 to September 1923, August 1928 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,330.20 ft (710.245 m) above mean sea level (State Highway Department bench mark). Prior to May 6, 1929, nonrecording gages at pumping plant 1.2 mi (1.9 km) downstream at different datums. May 6, 1929, to Sept. 30, 1931, nonrecording gage, and Oct. 1, 1931, to Nov. 10, 1937, water-stage recorder at present site and datum. Nov. 11, 1937, to Sept. 30, 1946, water-stage recorder at pumping plant 1.2 mi (1.9 km) downstream at different datum.

REMARKS.--Records good except those for winter period, which are fair. Some regulation by reservoirs on tributary streams. Diversions for irrigation of about 1,100,000 acres (4,450 km²) above station (does not include flood irrigation).

AVERAGE DISCHARGE.--49 years (1922-23, 1928-76), 11,590 ft³/s (328.2 m³/s), 8,397,000 acre-ft/yr (10.4 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 96,300 ft³/s (2,730 m³/s) June 19, 1944, gage height, 12.74 ft (3.883 m), site and datum then in use; maximum gage height, 21.7 ft (6.61 m) Mar. 20, 1944 (present site and datum, ice jam), from floodmark; minimum discharge, 996 ft³/s (28.2 m³/s) Dec. 14, 1932.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 45,700 ft³/s (1,290 m³/s) June 13, gage height, 10.46 ft (3.188 m); minimum daily, 3,500 ft³/s (99.1 m³/s) Jan. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8080	9560	7000	8000	11300	9690	9440	14000	38300	28700	12500	7610
2	8180	8540	7000	6000	11500	9000	9350	14400	36900	30700	12600	7440
3	8210	9180	7600	5500	11000	7000	9510	15800	34200	34000	14300	7300
4	8050	10300	9000	5000	9000	6500	9780	17400	33600	35300	18600	7240
5	7930	10100	11000	4500	8000	6000	9660	18500	36400	32400	18800	7150
6	7890	9990	11900	4200	6000	7000	9620	20700	38500	30500	16600	7120
7	7860	8700	11300	4000	5500	8000	7360	22400	41300	29100	15400	7130
8	7990	8310	10500	3800	5500	10300	6540	23200	42600	29500	14600	7420
9	8050	9460	10200	3500	6000	11200	7510	22300	43300	29400	13900	7930
10	8250	10300	10400	4000	8000	10400	9660	21900	42700	28600	12900	8110
11	8410	10300	10400	4500	10000	10000	11000	23200	42900	27800	12300	8320
12	8470	9990	9660	5500	12000	9500	11600	24700	44300	27600	11600	8350
13	8410	9880	9020	7000	13900	9000	11800	26500	45300	26900	11200	8370
14	8510	9880	8400	9000	13800	9000	11900	27900	42800	25800	10700	8430
15	8970	10000	7400	10400	13300	9530	12600	26100	41700	25200	10500	8700
16	9220	10100	6800	10900	12900	9720	13100	28700	41000	23400	10200	8970
17	9180	9850	6400	10700	12200	9670	13200	32600	36000	21300	9960	8780
18	9110	9670	6800	11100	11600	9840	13400	31100	34200	19500	9610	8450
19	8910	10300	7400	12100	11400	10000	13600	29200	35200	18700	9320	8390
20	8840	10500	7800	13000	10300	10700	13000	31500	33500	18800	9040	8490
21	9010	10200	8400	12700	9860	11500	12400	35900	32700	20000	8620	8860
22	9490	9600	9230	11900	9590	11000	12000	36700	34200	19400	8510	8930
23	9600	9180	9500	11400	9510	10200	11900	36700	39500	18300	8450	9080
24	10500	9000	9700	11000	9570	9710	11900	37400	42100	17600	8260	8930
25	10800	8600	9550	10000	9610	9690	11700	37400	41100	16600	8060	8670
26	10500	8400	9860	9000	9700	9730	11900	35800	37000	15600	8050	8660
27	9880	8200	10200	8700	9890	9780	12300	35300	34000	15000	8060	9510
28	9560	8000	10500	9000	9820	9770	13700	33900	31800	14400	8090	9530
29	9780	7400	10300	9500	9730	9650	15000	32700	29700	14000	8070	9520
30	9740	8200	9960	10000	---	9540	15000	34900	28400	13400	8030	9240
31	9630	---	9670	11000	---	9500	---	37900	---	12900	7800	---
TOTAL	277010	281690	282850	256900	290480	292120	341630	866700	1135200	720400	344630	250630
MEAN	8936	9390	9124	8287	10020	9423	11390	27960	37840	23240	11120	8354
MAX	10800	10500	11900	13000	13900	11500	15000	37900	45300	35300	18800	9530
MIN	7860	7400	6400	3500	5500	6000	6540	14000	28400	12900	7800	7120
AC-FT	549400	558700	561000	509600	576200	579400	677000	1719000	2252000	1429000	683600	497100

CAL YR 1975 TOTAL 6133880 MEAN 16810 MAX 69700 MIN 2600 AC-FT 12170000
WTR YR 1976 TOTAL 5340240 MEAN 14590 MAX 45300 MIN 3500 AC-FT 10590000

06309075 SUNDAY CREEK NEAR MILES CITY, MT

LOCATION.--Lat 46°28'23", long 105°50'34", in NW¼SW¼SW¼ sec.3, T.8 N., R.47 E., Custer County, Hydrologic Unit 10100001, on left bank 15 ft (5 m) downstream from bridge on FAS Route 489, 5.5 mi (8.8 km) downstream from confluence of North and South Sunday Creeks, 9.5 mi (15.3 km) upstream from mouth, and 5.5 mi (8.8 km) north of Miles City.

DRAINAGE AREA.--714 mi^2 (1,849 km^2).

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,380 ft (725 m), from topographic map.

REMARKS.--Records good except those for winter period, which are poor. Diversions for irrigation of 400 acres (1.62 km^2) above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,760 ft^3/s (191 m^3/s) May 7, 1975, gage height, 13.30 ft (4.054 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft^3/s (14.2 m^3/s) and maximums (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 11	1800	550	15.6	*7.58	2.310	June 15	1500	624	17.7	4.45	1.356
June 13	0100	*927	26.3	5.26	1.603						

No flow on many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	3.5	.50	4.0	70	58	4.0	18	.11	11	.14	
2	0	3.0	.50	3.5	74	31	3.0	9.8	.03	7.0	.06	
3	0	2.7	.50	3.0	98	14	3.0	5.5	0	5.5	.36	
4	0	2.5	.70	2.8	96	14	3.0	4.0	0	4.5	175	
5	0	2.2	1.0	2.4	89	14	3.0	2.5	.02	3.5	143	
6	0	2.2	1.0	2.2	82	18	3.5	2.1	7.0	3.0	52	
7	0	2.0	1.0	2.0	79	23	3.0	1.7	93	3.0	28	
8	.15	1.5	1.5	1.8	90	30	2.5	1.5	44	8.6	14	
9	.32	1.5	2.5	1.6	200	38	2.5	1.1	17	9.8	9.0	
10	.21	1.1	3.0	1.4	410	45	2.5	.90	13	23	4.5	
11	.21	.80	6.0	1.2	500	50	2.1	.70	6.5	62	14	
12	.21	1.1	8.0	1.1	440	45	1.7	.90	117	32	17	
13	.17	1.1	10	1.0	370	40	1.7	.90	427	20	6.5	
14	.17	1.1	9.0	1.0	410	50	1.9	.50	131	9.0	4.0	
15	2.0	.95	8.5	1.0	463	55	2.3	2.5	430	3.5	1.5	
16	2.0	.95	7.0	1.0	440	60	2.1	4.0	147	3.5	.50	
17	1.7	.95	6.5	1.0	400	55	1.9	19	85	3.0	.23	
18	2.5	1.1	5.8	1.2	379	45	1.9	7.0	57	3.5	.18	
19	4.7	1.1	5.4	1.4	340	40	1.9	3.5	39	8.8	.11	
20	4.4	1.1	4.5	2.0	310	35	1.9	2.1	29	8.7	.06	
21	4.9	1.1	3.9	2.6	290	25	1.7	2.5	25	71	.04	
22	15	1.1	3.3	3.3	260	20	1.7	2.3	21	31	.02	
23	116	1.1	2.9	4.2	240	17	1.5	1.7	20	17	0	
24	76	1.1	3.0	5.2	230	16	1.9	.90	165	7.5	0	
25	33	1.0	3.2	6.6	210	11	2.1	.50	106	3.5	0	
26	17	.90	3.5	8.2	168	7.5	2.1	.50	61	2.1	0	
27	12	.70	3.8	10	130	7.0	2.5	.42	39	1.3	0	
28	9.1	.60	4.2	13	115	9.0	7.0	.23	29	.90	0	
29	6.4	.50	4.6	21	100	6.5	32	.14	22	.42	0	
30	5.2	.50	5.0	34	---	5.5	26	.18	16	.23	0	
31	4.1	---	5.0	64	---	5.0	---	.14	---	.23	0	---
TOTAL	317.44	41.05	125.30	208.7	7083	889.5	127.9	97.71	2146.66	368.08	470.20	0
MEAN	10.2	1.37	4.04	6.73	244	28.7	4.26	3.15	71.6	11.9	15.2	0
MAX	116	3.5	10	64	500	60	32	19	430	71	175	0
MIN	0	.50	.50	1.0	70	5.0	1.5	.14	0	.23	0	0
AC-FT	630	81	249	414	14050	1760	254	194	4260	730	933	0

CAL YR 1975 TOTAL 21732.88 MEAN 59.5 MAX 4750 MIN 0 AC-FT 43110
WTR YR 1976 TOTAL 11875.54 MEAN 32.4 MAX 500 MIN 0 AC-FT 23560

06324500 POWDER RIVER AT MOORHEAD, MT

LOCATION.--Lat 45°04'04", long 105°52'10", in NW¼SE¼NW¼ sec.8, T.9 S., R.48 E., Powder River County, Hydrologic Unit 10090207, on left bank 500 ft (152 m) downstream from discontinued post office at Moorhead, 6.2 mi (10.0 km) upstream from Buffalo Creek, and at mile 184.8 (297.3 km).

DRAINAGE AREA.--8,088 mi² (20,948 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1929 to September 1972, October 1974 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1932(M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,334.6 ft (1,016.39 m) above mean sea level. Prior to Aug. 28, 1931, nonrecording gage at site 0.3 mi (0.5 km) upstream at different datum. Aug. 28, 1931, to Mar. 21, 1956, water-stage recorder at site 1.2 mi (1.9 km) upstream at different datum. Mar. 22 to July 24, 1956, nonrecording gage at site 0.3 mi (0.5 km) downstream at different datum. July 25 to Sept. 12, 1956, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records good except those for winter period, which are poor. Some regulation by three reservoirs in Wyoming with combined usable capacity of 36,800 acre-ft (45.4 hm³). Diversions for irrigation of about 66,300 acres (268 km²) above station.

AVERAGE DISCHARGE.--45 years, 458 ft³/s (12.97 m³/s), 331,800 acre-ft/yr (409 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,000 ft³/s (651 m³/s) June 17, 1962, gage height, 12.77 ft (3.892 m), from graph based on gage readings, from rating curve extended above 7,000 ft³/s (198 m³/s) on basis of slope-area measurement of peak flow; maximum gage height, 17.7 ft (5.39 m) Mar. 21, 1956, site and datum then in use (ice jam); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 30, 1923, reached a stage of 19 ft (5.8 m), site and datum used 1931-56, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,370 ft³/s (152 m³/s) June 23, gage height, 5.81 ft (1.771 m); minimum discharge, 19 ft³/s (0.538 m³/s) Sept. 6, gage height, 1.92 ft (0.585 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	95	420	220	200	300	300	294	780	2080	584	77	42
2	112	420	240	190	300	290	286	822	2190	598	85	30
3	123	390	280	180	300	280	294	668	1410	794	66	25
4	139	390	300	170	280	270	302	584	1350	1040	609	21
5	139	390	330	160	270	270	278	462	1480	1150	1030	20
6	143	380	360	160	270	270	264	380	1590	994	696	20
7	147	370	380	160	270	270	278	639	1930	898	486	21
8	151	360	400	160	270	280	278	510	1430	654	430	26
9	175	350	400	160	270	350	310	598	1400	522	350	30
10	165	330	400	160	280	550	334	654	1230	440	270	33
11	165	310	360	160	350	750	380	752	1010	370	231	40
12	175	280	320	170	420	1100	370	808	948	326	218	56
13	190	240	260	170	500	1000	342	1040	822	303	180	59
14	190	280	220	180	520	800	370	1230	796	568	151	54
15	195	390	170	190	520	700	410	1300	1200	342	127	56
16	205	326	140	190	520	800	430	1460	1310	251	105	72
17	212	310	115	200	500	1200	546	1470	2290	218	85	85
18	225	294	120	200	460	1100	612	1540	2150	180	72	69
19	251	270	130	200	430	808	752	1230	1300	170	64	66
20	244	220	140	210	420	522	898	1280	962	151	54	61
21	238	100	150	210	400	510	654	1390	882	131	52	61
22	238	55	160	210	390	558	510	1910	930	115	50	69
23	244	60	170	210	380	486	420	1860	1500	175	48	82
24	251	80	180	200	360	420	370	1840	3100	143	44	89
25	264	100	190	200	350	370	334	1940	1910	131	40	139
26	310	120	200	200	340	350	334	2160	1780	119	42	165
27	342	140	200	230	330	342	410	1920	1380	92	44	190
28	350	160	200	250	320	350	598	1710	1060	79	44	238
29	390	180	200	270	310	350	584	1350	808	102	44	270
30	360	200	200	280	---	326	752	1220	682	105	44	257
31	350	---	200	290	---	294	---	1520	---	79	48	---
TOTAL	6778	7915	7335	6120	10630	16266	12994	37027	42968	11874	5886	2448
MEAN	219	264	237	197	367	525	433	1194	1432	383	190	81.5
MAX	390	420	400	290	520	1200	898	2160	3100	1150	1030	270
MIN	95	55	115	160	270	270	264	380	682	79	40	20
AC-FT	13440	15700	14550	12140	21080	32260	25770	73440	85230	23550	11670	4850

CAL YR 1975 TOTAL 246785 MEAN 676 MAX 8370 MIN 16 AC-FT 489500
WTR YR 1976 TOTAL 168239 MEAN 460 MAX 3100 MIN 20 AC-FT 333700

06324500 POWDER RIVER AT MOORHEAD, MT--Continued

WATER-QUALITY RECORDS

LOCATION.--Samples collected at bridge on county road, 1.1 mi (1.8 km) upstream from discontinued post office at Moorhead, 1.2 mi (1.9 km) upstream from present gage.

PERIOD OF RECORD.--Water years 1951-53, 1956-57, 1969-72, 1974 to current year.
PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: February 1951 to September 1953, October 1955 to September 1957, October 1974 to current year.
SUSPENDED SEDIMENT DISCHARGE: October 1974 to current year.
REMARKS.--Flow regulated by reservoirs and diversions for irrigation upstream from station. Flow affected by ice during most of winter months.
EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum daily, 32.0°C July 7, 1951; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily, 40,500 mg/L June 24, 1976; minimum daily, 5 mg/L Sept. 15, 1975.
SEDIMENT LOADS: Maximum daily, 770,000 tons (699,000 tonnes) June 19, 1975; minimum daily, 0.24 ton (0.22 tonne) Sept. 15, 1975.
EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum daily, 31.0°C July 23; minimum daily, 0.0°C on many days during November to March.
SEDIMENT CONCENTRATIONS: Maximum daily, 40,500 mg/L June 24; minimum daily, 67 mg/L Dec. 22.
SEDIMENT LOADS: Maximum daily, 339,000 tons (308,000 tonnes) June 24; minimum daily, 4.2 tons (3.8 tonnes) Sept. 5.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
16...	1230	211	2250	7.9	12.0	8.5	390	10.0	97	1.5	590	350
NOV												
19...	1600	270	1980	8.4	-4.0	.0	320	12.4	96	1.2	550	310
DEC												
17...	1130	115	2150	8.6	-10.0	.0	15	12.8	98	.4	640	360
JAN												
21...	1100	211	2180	8.1	5.5	.0	30	8.5	65	2.4	570	270
FEB												
19...	1230	427	1750	8.1	9.0	.0	40	11.7	90	2.6	420	220
MAR												
17...	0930	1200	2500	8.2	8.0	.0	240	11.7	90	1.0	570	330
APR												
29...	1045	579	1720	8.2	9.0	7.0	440	10.5	98	--	440	260
MAY												
25...	1545	1860	730	7.7	21.0	19.0	1800	7.2	89	3.4	190	23
JUN												
30...	1030	682	1340	7.8	28.0	21.5	2400	7.4	95	2.4	380	210
JUL												
28...	1100	78	2680	8.4	27.0	23.0	95	7.7	103	1.5	730	510
AUG												
24...	1430	44	2610	8.4	25.5	24.5	110	7.1	99	3.5	850	660
SEP												
30...	1500	259	2020	8.4	21.0	18.0	1000	7.5	90	2.3	590	390

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
OCT											
16...	130	65	300	5.4	17	294	0	750	180	.5	5.1
NOV											
19...	130	55	240	4.5	6.1	294	0	600	170	.3	6.8
DEC											
17...	150	64	230	4.0	5.7	334	0	600	150	.4	8.8
JAN											
21...	130	59	270	4.9	6.9	365	0	590	200	.4	10
FEB											
19...	100	42	210	4.4	6.3	243	0	480	150	.5	7.5
MAR											
17...	140	54	330	6.0	6.5	294	0	700	220	.4	6.6
APR											
29...	99	48	190	3.9	5.0	231	0	520	92	.4	5.8
MAY											
25...	50	16	74	2.3	3.1	204	0	--	.1	.3	8.8
JUN											
30...	93	35	160	3.6	5.2	206	0	520	49	.4	8.4
JUL											
28...	180	68	430	6.9	11	265	0	980	320	.8	7.0
AUG											
24...	190	91	360	5.4	11	232	0	1100	180	.6	6.9
SEP											
30...	130	65	270	4.8	8.5	251	0	660	170	.5	6.0

06324500 POWDER RIVER AT MOORHEAD, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT											
16...	1590	2.16	906	.06	.13	.97	1.1	1.2	.39	340	20
NOV											
19...	1350	1.84	984	.17	.04	3.1	3.1	3.3	.01	770	0
DEC											
17...	1370	1.86	425	.35	.04	.42	.46	.81	.00	250	10
JAN											
21...	1450	1.97	826	.64	.07	.78	.85	1.5	.03	320	0
FEB											
19...	1120	1.52	1290	.50	.13	--	--	--	.07	250	30
MAR											
17...	1600	2.18	5180	.60	.13	1.4	1.5	2.1	.30	310	10
APR											
29...	1070	1.46	1670	.30	.09	2.5	2.6	2.9	.08	70	20
MAY											
25...	--	--	--	.35	.21	4.9	5.1	5.5	2.2	370	70
JUN											
30...	973	1.32	1790	.44	.15	6.3	6.4	6.8	2.5	160	40
JUL											
28...	2130	2.90	449	.25	.00	1.5	1.5	1.8	.44	500	110
AUG											
24...	2050	2.79	244	.00	.00	.77	.77	.77	.17	400	90
SEP											
30...	1430	1.94	1000	.06	.00	3.3	3.3	3.4	1.1	330	110

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TOTAL ALDRIN (UG/L)	ALDRIN IN BOTTOM MA-TERIAL (UG/KG)	TOTAL CHLOR-DANE (UG/L)	CHLOR-DANE IN BOTTOM MA-TERIAL (UG/KG)	TOTAL DDD (UG/L)	DDD IN BOTTOM MA-TERIAL (UG/KG)	TOTAL DDE (UG/L)	DDE IN BOTTOM MA-TERIAL (UG/KG)	TOTAL DDT (UG/L)	DDT IN BOTTOM MA-TERIAL (UG/KG)
SEP											
03...	1400	.00	.0	.0	0	.00	.0	.00	.0	.00	.0

DATE	TOTAL DI-AZINON (UG/L)	TOTAL DI-ELDRIN (UG/L)	DI-ELDRIN IN BOTTOM MA-TERIAL (UG/KG)	TOTAL ENDRIN (UG/L)	ENDRIN IN BOTTOM MA-TERIAL (UG/KG)	TOTAL ETHION (UG/L)	TOTAL HEPTA-CHLOR (UG/L)	HEPTA-CHLOR IN BOTTOM MA-TERIAL (UG/KG)	TOTAL HEPTA-CHLOR EPOXIDE (UG/L)	HEPTA-CHLOR EPOXIDE IN BOT-TOM MA-TERIAL (UG/KG)	TOTAL LINDANE (UG/L)
SEP											
03...	.00	.00	.0	.00	.0	.00	.00	.0	.00	.0	.00

DATE	LINDANE IN BOTTOM MA-TERIAL (UG/KG)	TOTAL MALA-THION (UG/L)	TOTAL METHYL PARA-THION (UG/L)	TOTAL METHYL TRI-THION (UG/L)	TOTAL PARA-THION (UG/L)	TOTAL TOX-APHENE (UG/L)	TOX-APHENE IN BOTTOM MA-TERIAL (UG/KG)	TOTAL TRI-THION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)
SEP											
03...	.0	.00	.00	.00	.00	0	0	.00	.00	.00	.00

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	DIS-SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS-PENDED GROSS ALPHA AS U-NAT. (UG/L)	DIS-SOLVED GROSS BETA AS CS-137 (PC/L)	SUS-PENDED GROSS BETA AS CS-137 (PC/L)	DIS-SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS-PENDED GROSS BETA AS SR90 /Y90 (PC/L)	DIS-SOLVED RA-226 (RADON METHOD) (PC/L)	DIS-SOLVED URANIUM (DIRECT FLUORO-METRIC) (PC/L)	TOTAL FILT-RABLE RESIDUE (MG/L)	TOTAL NON-FILT-RABLE RESIDUE (MG/L)
NOV											
19...	1600	60	39	24	20	20	17	.11	9.7	1600	570

06324500 POWDER RIVER AT MOORHEAD, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	DIS-SOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	DIS-SOLVED BERYLLIUM (BE) (UG/L)	DIS-SOLVED BISMUTH (BI) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DIS-SOLVED CADMIUM (CD) (UG/L)
OCT											
16...	1230	14000	--	9	--	--	10	--	--	0	--
NOV											
19...	1600	14000	10	6	1	70	0	0	<50	20	0
JAN											
21...	1100	1300	--	0	--	--	10	--	--	<10	--
APR											
29...	1045	15000	--	20	--	--	10	--	--	<10	--
JUL											
28...	1100	16000	--	6	--	--	0	--	--	<10	--

DATE	TOTAL CHROMIUM (CR) (UG/L)	DIS-SOLVED CHROMIUM (CR) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED GALLIUM (GA) (UG/L)	DIS-SOLVED GERMANIUM (GE) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)
OCT										
16...	40	--	--	30	--	--	--	20000	<100	--
NOV										
19...	10	0	<25	40	2	<10	<50	15000	<100	2
JAN										
21...	0	--	--	10	--	--	--	2100	<100	--
APR										
29...	30	--	--	40	--	--	--	30000	<100	--
JUL										
28...	30	--	--	40	--	--	--	22000	<100	--

DATE	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYBDENUM (MO) (UG/L)	DIS-SOLVED MOLYBDENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)
OCT										
16...	90	--	380	--	.2	--	4	--	50	--
NOV										
19...	80	60	310	0	.0	.0	3	3	<50	2
JAN										
21...	60	--	50	--	.2	--	1	--	<50	--
APR										
29...	80	--	550	--	.2	--	3	--	50	--
JUL										
28...	130	--	420	--	.2	--	5	--	50	--

DATE	TOTAL SELENIUM (SE) (UG/L)	DIS-SOLVED SELENIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED STRONTIUM (SR) (UG/L)	DIS-SOLVED TIN (SN) (UG/L)	DIS-SOLVED TITANIUM (TI) (UG/L)	DIS-SOLVED VANADIUM (V) (UG/L)	DIS-SOLVED ZIRCONIUM (ZR) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
16...	0	--	--	--	--	--	--	--	40	--
NOV										
19...	2	2	<3	1200	<25	<20	2.1	<40	70	0
JAN										
21...	2	--	--	--	--	--	--	--	60	--
APR										
29...	3	--	--	--	--	--	--	--	170	--
JUL										
28...	2	--	--	--	--	--	--	--	90	--

06324500 POWDER RIVER AT MOORHEAD, MT--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	5.0	---	0.0	0.0	0.0	8.5	10.0	23.0	26.5	22.0	26.0
2	7.0	9.0	---	0.0	0.0	0.0	6.0	10.5	22.0	22.0	25.0	26.0
3	8.5	11.5	---	0.0	0.0	0.0	5.0	10.0	19.5	23.0	28.5	20.0
4	11.5	---	---	0.0	0.0	0.0	8.0	16.0	19.0	23.0	25.0	29.0
5	8.0	6.5	---	0.0	0.0	0.0	9.5	17.0	22.5	23.0	22.5	24.5
6	9.0	8.5	---	0.0	0.0	0.0	12.0	12.5	19.0	26.5	24.5	26.5
7	11.0	4.0	---	0.0	0.0	0.0	9.5	10.0	24.5	28.0	29.0	17.0
8	9.0	4.0	---	0.0	0.0	0.0	11.0	19.0	21.0	22.0	21.0	16.0
9	5.5	3.5	---	0.0	0.0	0.0	11.5	14.0	26.0	30.0	23.0	23.0
10	13.0	1.0	---	0.0	0.0	0.0	12.5	14.5	22.0	23.0	26.0	24.5
11	7.0	2.0	---	0.0	0.0	0.0	12.0	15.0	23.0	25.0	27.5	25.0
12	6.5	0.0	0.0	0.0	0.0	0.0	18.0	12.0	17.5	29.0	24.5	23.0
13	7.5	0.0	0.0	0.0	0.0	0.0	14.0	13.5	16.5	25.0	27.0	16.0
14	6.0	1.0	0.0	0.0	0.0	0.0	14.0	19.5	13.5	21.0	25.0	22.5
15	3.0	1.0	0.0	0.0	0.0	0.0	12.5	12.0	18.0	23.5	21.5	24.5
16	5.5	2.5	0.0	0.0	0.0	0.0	12.0	13.0	17.0	20.0	---	16.5
17	4.0	4.0	0.0	0.0	0.0	0.0	7.0	20.0	15.0	25.0	24.5	21.0
18	12.0	2.5	0.0	0.0	0.0	0.0	10.0	13.5	17.0	22.5	24.0	23.0
19	7.5	1.0	0.0	0.0	0.0	3.5	10.0	14.0	18.0	27.0	26.5	16.0
20	9.5	0.0	0.0	0.0	0.0	2.0	7.0	21.5	19.5	25.0	27.0	12.0
21	10.0	0.0	0.0	0.0	0.0	2.0	7.5	---	26.0	25.0	27.0	23.0
22	9.0	0.0	0.0	0.0	0.0	3.5	9.0	13.5	22.0	26.5	30.0	22.0
23	4.5	0.0	0.0	0.0	0.0	9.0	10.5	14.0	18.0	31.0	25.0	14.0
24	5.0	0.0	0.0	0.0	0.0	5.5	10.0	13.5	15.0	26.0	26.0	14.0
25	6.0	0.0	0.0	0.0	0.0	7.0	11.0	16.0	16.0	22.0	27.0	13.5
26	5.0	---	0.0	0.0	0.0	8.0	10.0	15.5	16.0	26.0	25.0	14.0
27	5.0	---	0.0	0.0	0.0	6.0	5.0	20.0	20.0	22.0	23.0	10.0
28	8.0	---	0.0	0.0	0.0	9.0	5.0	22.0	19.0	23.0	25.5	17.0
29	7.5	---	0.0	0.0	0.0	5.0	6.5	20.0	19.0	28.0	27.0	17.5
30	5.5	---	0.0	0.0	---	4.0	7.0	19.0	25.0	27.5	23.0	18.0
31	4.5	---	0.0	0.0	---	9.5	---	23.0	---	26.0	27.5	---
MONTH	7.5	3.0	---	0.0	0.0	2.5	9.5	15.5	19.5	25.0	25.5	20.0

YEAR MAX 31.0 MIN 0.0 MEAN 11.0

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM
APR							
29...	1045	7.0	579	3240	5070	--	25
MAY							
25...	1545	19.0	1860	6660	33400	--	34
AUG							
24...	1430	24.5	44	234	28	99	--

DATE	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
APR						
29...	40	70	76	91	94	100
MAY						
25...	44	69	92	100	--	--
AUG						
24...	--	--	--	--	--	--

06324500 POWDER RIVER AT MOORHEAD, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	95	100	26	420	1330	1510	220	696	413
2	112	147	44	420	1170	1330	240	864	560
3	123	157	52	390	1000	1050	280	888	671
4	139	180	68	390	930	979	300	918	744
5	139	391	147	390	1010	1060	330	822	732
6	143	498	192	380	820	841	360	911	885
7	147	571	227	370	810	809	380	780	800
8	151	531	216	360	880	855	400	756	816
9	175	775	366	350	870	822	400	730	788
10	165	675	301	330	750	668	400	1900	2050
11	165	504	225	310	780	653	360	3380	3290
12	175	639	302	280	880	665	320	3280	2830
13	190	751	385	240	1120	726	260	1240	870
14	190	708	363	280	1690	1280	220	470	279
15	195	717	378	390	1930	2030	170	100	46
16	205	925	512	326	1440	1270	140	85	32
17	212	1060	607	310	1160	971	115	82	25
18	225	1200	729	294	1070	849	120	132	43
19	251	1460	989	270	984	717	130	88	31
20	244	1600	1050	220	840	499	140	152	57
21	238	1400	900	100	504	136	150	108	44
22	238	1180	758	55	354	53	160	67	29
23	244	1130	744	60	360	58	170	79	36
24	251	1130	766	80	270	58	180	102	50
25	264	1160	827	100	276	75	190	108	55
26	310	1400	1170	120	348	113	200	82	44
27	342	1430	1320	140	312	118	200	89	48
28	350	1210	1140	160	265	114	200	80	43
29	390	1470	1550	180	384	187	200	122	66
30	360	1210	1180	200	696	376	200	107	58
31	350	1450	1370	---	---	---	200	147	79
TOTAL	6778	---	18904	7915	---	20872	7335	---	16514

		JANUARY			FEBRUARY			MARCH	
1	200	107	58	300	137	111	300	374	303
2	190	119	61	300	140	113	290	109	85
3	180	82	40	300	102	83	280	119	90
4	170	98	45	280	93	70	270	226	165
5	160	132	57	270	98	71	270	169	123
6	160	113	49	270	138	101	270	197	144
7	160	90	39	270	138	101	270	182	133
8	160	100	43	270	148	108	280	153	116
9	160	116	50	270	165	120	350	264	249
10	160	109	47	280	174	132	550	309	459
11	160	98	42	350	170	161	750	609	1230
12	170	89	41	420	153	174	1100	691	2050
13	170	92	42	500	159	215	1000	367	991
14	180	108	52	520	191	268	800	297	642
15	190	143	73	520	193	271	700	259	490
16	190	199	102	520	239	336	800	495	1070
17	200	197	105	500	96	130	1200	565	1830
18	200	178	96	460	117	145	1100	7320	21700
19	200	194	105	430	110	128	808	9140	19900
20	210	153	87	420	108	122	522	4680	6600
21	210	185	105	400	123	133	510	3720	5120
22	210	169	96	390	110	116	558	4380	6600
23	210	127	72	380	110	113	486	4320	5670
24	200	154	83	360	115	112	420	5700	6460
25	200	162	98	350	495	468	370	3250	3250
26	200	204	110	340	154	141	350	2740	2590
27	230	200	124	330	523	466	342	2600	2400
28	250	196	132	320	457	395	350	2530	2390
29	270	185	135	310	487	408	350	2520	2380
30	280	239	181	---	---	---	326	2220	1950
31	290	189	148	---	---	---	294	2000	1590
TOTAL	6120	---	2519	10630	---	5312	16266	---	98770

06324500 POWDER RIVER AT MOORHEAD, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	294	2000	1590	780	5580	11800	2080	19300	108000
2	286	1660	1440	822	6720	14900	2190	34500	204000
3	294	1430	1140	668	5040	9090	1410	28100	107000
4	302	1080	881	584	4540	7160	1350	16800	61200
5	278	1390	1040	462	3420	4270	1450	13000	50900
6	264	1500	1070	380	2780	2850	1590	10000	42900
7	278	1440	1080	639	4680	8070	1930	17800	92800
8	278	1430	1070	510	3480	4790	1430	8470	32700
9	310	1500	1260	598	3840	6200	1460	6380	25100
10	334	1670	1510	654	4540	8020	1230	4530	15000
11	380	2340	2400	752	7440	15100	1010	4790	13100
12	370	2120	2120	808	7320	16000	946	3660	9350
13	342	1990	1840	1040	7980	22400	822	2560	5680
14	370	1960	1960	1230	8400	27900	768	2960	6120
15	410	1610	2000	1300	5400	19000	1200	5040	16300
16	430	1920	2230	1460	7440	29300	1310	6380	22600
17	546	3340	4920	1470	10100	40100	2290	19900	123000
18	612	4660	7730	1540	8700	36200	2150	32500	189000
19	752	5960	12100	1230	7080	23500	1300	12400	43500
20	896	9460	23000	1280	7080	24500	962	6600	17100
21	654	9120	16100	1390	7560	28400	882	4290	10200
22	510	8760	12100	1910	10500	54100	930	3850	9670
23	420	5940	6740	1860	9360	47000	1560	8580	36100
24	370	3760	3780	1840	7240	36000	3100	40500	339000
25	334	2420	2180	1940	8040	42100	1910	13200	68100
26	334	2100	1890	2160	11900	69400	1780	7540	36200
27	410	2520	2790	1920	10600	55000	1380	7980	29700
28	598	4360	7070	1710	9020	41600	1060	8220	23500
29	584	3120	4920	1350	9740	35500	806	5340	11600
30	752	4920	9990	1220	8640	28500	682	6290	11600
31	---	---	---	1520	14700	60300	---	---	---
TOTAL	12994	---	139941	37027	---	829050	42968	---	1761020
		JULY			AUGUST			SEPTEMBER	
1	584	3740	5900	77	390	81	42	132	15
2	598	3740	6040	85	550	126	30	129	10
3	794	3520	7550	66	500	89	25	111	7.5
4	1040	2620	7360	609	5480	9010	21	85	4.8
5	1150	6270	19500	1030	18600	51700	20	78	4.2
6	994	9830	25600	696	16000	30100	20	89	4.8
7	898	10800	25700	486	11000	14400	21	76	4.3
8	654	14100	24900	430	9600	11100	26	82	5.8
9	522	8400	9020	350	6800	6430	30	91	7.4
10	440	3980	4700	270	5740	4180	33	96	8.6
11	370	2420	2420	231	6100	3800	40	165	18
12	326	1560	1370	218	5930	3490	56	148	22
13	363	2150	2110	180	4800	2330	59	119	19
14	558	11000	16600	151	3200	1300	54	138	20
15	342	5400	4990	127	1580	542	56	163	25
16	251	2100	1420	105	640	181	72	115	22
17	218	1300	765	85	440	101	85	95	22
18	180	860	428	72	392	76	69	95	18
19	170	670	308	64	324	56	66	86	15
20	151	760	310	54	280	41	61	75	12
21	131	570	202	52	232	33	61	90	15
22	115	360	112	50	294	40	69	69	17
23	175	1690	799	48	226	29	82	97	21
24	143	930	359	44	212	25	89	100	24
25	131	820	290	40	174	19	139	400	150
26	119	650	209	42	168	19	165	825	368
27	92	1000	248	44	176	21	190	1080	554
28	79	1080	230	44	174	21	238	2090	1340
29	102	1120	308	44	146	17	270	2150	1570
30	105	960	272	44	168	20	257	2490	1730
31	79	600	128	48	173	22	---	---	---
TOTAL	11874	---	170348	5886	---	139399	2446	---	6054.4
YEAR	168239.0		3208703						

06324710 POWDER RIVER AT BROADUS, MT

LOCATION.--Lat 45°25'37", long 105°24'05", in NW¼SE¼ sec.3, T.5 S., R.51 E., Powder River County, Hydrologic Unit 10090207, on right bank 150 ft (45.7 m) upstream from bridge on U.S. Highway 212, 0.4 mi (0.6 km) downstream from Doyle Creek, 1 mi (2 km) south of Broadus and 7 mi (11 km) upstream from Little Powder River.

DRAINAGE AREA.--8,748 mi^2 (22,657 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1975 to September 1976.

GAGE.--Water-stage recorder. Altitude of gage is 3,020 ft (920 m), from topographic map.

REMARKS.--Water-discharge records good except those for winter period, which are poor. Some regulation by three reservoirs in Wyoming with combined usable capacity of 36,800 acre-ft (45.4 hm^3). Diversions for irrigation of about 70,000 acres (283 km^2) above station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,740 ft^3/s (191 m^3/s) June 24, gage height, 6.19 ft (1.887 m), only peak above base of 4,000 ft^3/s (113 m^3/s); maximum gage height, 8.89 ft (2.710 m) Mar. 17 (backwater from ice); minimum discharge, 17 ft $^3/s$ (0.481 m^3/s) Sept. 9, gage height, 1.98 ft (0.604 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	354	210	230	290	350	457	735	1780	660	78	36
2	75	403	240	220	280	350	451	775	2450	638	68	34
3	90	383	270	200	270	350	424	726	1640	571	63	32
4	103	397	300	180	270	350	419	681	1250	776	63	28
5	112	387	330	170	270	350	440	597	1240	794	568	24
6	120	378	350	160	260	340	434	517	1630	910	700	19
7	129	383	380	170	260	340	445	493	1680	700	522	18
8	145	392	410	170	260	370	424	654	1520	787	438	18
9	154	364	420	180	260	400	440	605	1390	593	476	17
10	150	369	420	190	300	500	445	690	1230	550	402	18
11	154	354	420	200	350	600	469	699	1080	483	325	18
12	160	341	400	210	400	800	523	699	996	420	272	21
13	170	324	320	210	450	1000	529	815	890	390	236	25
14	192	302	280	220	500	900	517	930	930	417	190	30
15	190	319	240	230	520	800	535	1040	952	530	156	38
16	192	403	200	230	520	800	565	1130	1230	388	135	39
17	217	336	170	230	500	1200	559	1160	1660	295	117	38
18	217	336	150	230	480	1400	605	1350	2170	245	98	39
19	228	319	160	230	460	1200	563	1190	1390	200	80	51
20	262	311	170	230	450	805	755	1010	985	169	64	49
21	254	130	180	230	420	645	745	1130	890	150	58	48
22	247	120	190	230	400	645	597	1640	870	127	51	46
23	251	110	200	230	380	621	475	1740	1010	107	48	42
24	251	110	210	230	370	645	457	1960	3260	117	45	45
25	258	120	230	240	360	605	481	1900	1920	144	41	54
26	282	140	240	250	350	541	451	2230	1550	112	39	64
27	294	160	245	260	350	541	445	2150	1260	112	39	109
28	306	180	240	270	350	517	475	1930	1040	100	38	132
29	311	190	240	280	350	529	547	1630	840	82	35	159
30	341	200	240	290	---	505	559	1290	724	72	36	240
31	350	---	240	290	---	481	---	1320	---	93	38	---
TOTAL	6262	8615	8295	6890	10680	19480	15331	35416	41397	11692	5519	1530
MEAN	202	287	268	222	368	628	511	1142	1380	377	178	51.0
MAX	350	403	420	290	520	1400	755	2230	3260	910	700	240
MIN	57	110	150	160	260	340	419	493	724	72	35	17
AC-FT	12420	17090	16450	13670	21180	38640	30410	70250	82110	23190	10950	3030

WTR YR 1976 TOTAL 171107 MEAN 468 MAX 3260 MIN 17 AC-FT 339400

06324710 POWDER RIVER AT BROADUS, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1975 to September 1976.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1975 to September 1976.
SUSPENDED SEDIMENT DISCHARGE: October 1975 to September 1976.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily, 29,300 mg/L Aug. 7; minimum daily, 24 mg/L Sept. 13.
SEDIMENT LOADS: Maximum daily, 199,000 tons (181,000 tonnes) June 24; minimum daily, 1.6 tons (1.5 tonnes) Sept. 13.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						0.0	9.0	---	23.0	25.0	21.0	26.0
2						---	5.0	---	---	21.5	---	24.5
3						---	8.5	15.0	23.0	25.5	---	25.0
4						---	10.0	17.0	24.0	24.5	28.0	16.0
5						---	10.0	15.0	23.0	26.0	19.0	17.0
6						0.0	14.5	11.5	21.5	26.5	25.0	17.0
7						---	15.0	19.5	26.0	27.0	25.0	22.0
8						0.0	13.0	21.5	26.0	28.0	26.5	18.0
9						---	12.0	---	26.5	30.5	26.5	21.0
10						0.0	11.5	---	27.0	27.0	24.0	24.0
11						---	11.5	---	25.0	28.5	25.5	12.0
12						0.0	18.0	14.0	21.0	34.0	25.0	16.0
13						---	19.0	16.0	20.0	28.0	26.0	22.0
14						---	16.0	19.5	13.0	26.5	---	21.0
15						0.0	16.0	17.0	19.0	20.0	22.0	24.0
16						---	12.0	---	18.0	28.0	26.0	23.0
17						1.0	6.5	19.0	16.0	27.0	26.0	17.0
18						1.0	9.5	21.0	18.0	30.0	27.0	18.0
19						1.0	12.5	22.0	23.0	28.0	29.0	15.0
20						---	11.0	18.5	24.0	27.0	---	19.0
21						4.5	10.0	20.5	18.0	29.0	---	21.0
22						---	10.0	18.0	18.0	---	26.0	19.0
23						---	11.0	15.5	---	31.0	26.0	20.0
24						---	11.0	17.5	---	28.0	25.0	19.0
25						9.5	11.0	---	17.0	26.5	18.0	14.0
26						---	8.0	15.0	---	29.0	20.0	14.0
27						---	6.0	23.0	---	26.5	20.0	10.0
28						---	6.0	21.0	---	27.0	23.0	16.0
29						7.0	9.0	20.0	27.0	---	26.0	18.0
30						11.0	9.5	20.0	---	28.0	20.0	17.0
31						11.5	---	23.5	---	31.0	26.0	---
MONTH						---	11.0	---	---	27.0	24.5	19.0

06324710 POWDER RIVER AT BROADUS, MT--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM
OCT 01...	0945	12.5	57	2860	440	95	--	--	--	--	--	--
MAR 19...	0905	1.0	1440	9420	36600	--	24	33	55	87	99	100
APR 27...	1445	4.5	442	2420	2890	--	45	58	69	89	100	--
MAY 26...	1640	18.0	2630	8700	61800	--	24	44	79	94	99	100
AUG 25...	0915	18.0	40	233	25	98	--	--	--	--	--	--

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	57	47	7.2	354	2060	1970	210	223	126
2	75	74	15	403	2230	2430	240	373	242
3	90	116	28	383	2170	2240	270	380	277
4	103	120	33	397	2130	2280	300	460	373
5	112	131	40	387	2000	2090	330	532	474
6	120	160	52	378	2100	2140	350	535	506
7	129	198	69	383	1850	1910	380	470	482
8	145	262	103	392	1770	1870	410	515	570
9	154	354	147	364	1660	1630	420	600	680
10	150	438	177	369	1540	1530	420	393	446
11	154	480	200	354	1720	1640	420	300	340
12	160	522	226	341	1650	1520	400	2520	2720
13	170	578	265	324	1080	945	320	7110	6140
14	192	622	322	302	990	807	280	6050	4570
15	190	641	329	319	1170	1010	240	8600	5570
16	192	658	341	403	2050	2230	200	7800	4210
17	217	724	424	336	1830	1660	170	13800	6330
18	217	984	577	336	1840	1670	150	13000	5260
19	228	1170	720	319	1470	1270	160	7200	3110
20	262	1280	905	311	1220	1020	170	5580	2560
21	254	1610	1100	130	410	144	180	2810	1370
22	247	1640	1090	120	318	103	190	2800	1440
23	251	1610	1090	110	160	48	200	2310	1250
24	251	1500	1020	110	218	65	210	2160	1220
25	258	1430	996	120	132	43	230	1380	857
26	282	1750	1330	140	202	76	240	600	389
27	294	2000	1590	160	298	129	245	550	364
28	306	2190	1810	180	183	89	240	410	266
29	311	2220	1860	190	145	74	240	740	480
30	341	2150	1980	200	105	57	240	3110	2020
31	350	2120	2000	---	---	---	240	4150	2690
TOTAL	6262	---	20846.2	8615	---	34690	8295	---	57332

06324710 POWDER RIVER AT BROADUS, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	230	4920	3060	290	248	194	350	1600	1510
2	220	5230	3110	280	262	198	350	1190	1120
3	200	3980	2150	270	340	248	350	570	539
4	180	2800	1360	270	411	300	350	380	359
5	170	2180	1000	270	408	297	350	410	387
6	160	2090	903	260	370	260	340	400	367
7	170	2100	991	260	363	255	340	350	321
8	170	2880	1320	260	422	296	370	350	350
9	180	3520	1860	260	509	357	400	520	562
10	190	2900	1490	300	500	405	500	1390	1880
11	200	2400	1300	350	372	352	600	1610	2610
12	210	1710	970	400	302	326	800	528	1140
13	210	1010	573	450	295	358	1000	1350	3650
14	220	1000	594	500	340	459	900	1780	4330
15	230	832	517	520	525	737	800	1900	4100
16	230	683	424	520	768	1080	800	4010	8660
17	230	660	410	500	780	1050	1200	8750	28400
18	230	650	404	480	575	745	1400	8310	31400
19	230	552	343	460	475	590	1200	7810	25300
20	230	451	280	450	650	790	805	8260	18000
21	230	412	256	420	710	805	645	9630	16800
22	230	382	237	400	700	756	645	7100	12400
23	230	558	347	380	720	739	621	5030	8430
24	230	606	376	370	780	779	645	6190	10800
25	240	480	311	360	900	875	605	6670	10900
26	250	369	249	350	1030	973	541	4500	6570
27	260	290	204	350	1180	1120	541	3900	5700
28	270	258	188	350	1310	1240	517	3200	4470
29	280	276	209	350	1530	1450	529	2380	3400
30	290	302	236	---	---	---	505	2900	3950
31	290	270	211	---	---	---	481	3020	3920
TOTAL	6890	---	25883	10680	---	18034	19480	---	222325
		APRIL			MAY			JUNE	
1	457	2320	2860	735	4180	8300	1780	14100	67800
2	451	3200	3900	775	4940	10300	2450	18500	122000
3	424	2600	2980	726	5290	10400	1640	24800	110000
4	419	2130	2410	681	4890	8990	1250	19000	64100
5	440	4110	4880	597	5360	8640	1240	15100	50600
6	434	2110	2470	517	4230	5900	1630	16500	72600
7	445	2300	2760	493	3450	4590	1680	14600	66200
8	424	2400	2750	654	3920	6920	1520	14300	58700
9	440	2550	3030	605	3780	6170	1360	10100	37100
10	445	1550	1860	690	4660	8680	1230	6480	21500
11	469	2120	2680	699	4800	9060	1080	3620	10600
12	523	2190	3090	699	5400	10200	996	4770	12800
13	529	2680	3830	815	7670	16900	890	4690	11300
14	517	2400	3350	930	8280	20800	930	4480	11200
15	535	2860	4130	1040	8820	24800	952	3810	9790
16	565	3040	5550	1130	8910	27200	1230	5400	17900
17	559	3080	5550	1160	6260	19600	1660	11300	50600
18	605	3880	6340	1350	6740	24600	2170	17600	103000
19	663	4820	8630	1190	7190	23100	1360	22300	81900
20	755	6580	14000	1010	6310	17200	985	11700	31100
21	745	7370	14800	1130	6080	18600	890	6570	15800
22	597	7660	12300	1640	8550	37900	870	5760	13500
23	475	7840	10100	1740	11800	55400	1010	14900	40600
24	457	6760	8340	1960	9450	50000	3260	22600	199000
25	481	5120	6650	1900	7200	36900	1920	19700	102000
26	451	2720	3310	2230	8500	51200	1550	15700	65700
27	445	1740	2090	2150	8460	49100	1260	12500	42500
28	475	2900	3800	1930	8910	46400	1040	9900	27800
29	547	5200	7680	1630	7740	34100	840	7830	17800
30	559	3220	4860	1290	8820	30700	724	6300	12300
31	---	---	---	1320	9450	33700	---	---	---
TOTAL	15331	---	160980	35416	---	716350	41397	---	1547790

06324710 POWDER RIVER AT BROADUS, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	660	5400	9620	78	683	144	36	115	11
2	638	4930	8490	68	583	107	34	105	9.6
3	571	4140	6380	63	410	70	32	140	12
4	776	5030	10500	63	357	61	28	100	7.6
5	794	6350	13600	568	9830	15100	24	40	2.6
6	910	5810	14300	700	25200	47600	19	47	2.4
7	700	8400	15900	522	29300	41300	18	37	1.8
8	767	11100	23000	438	24200	28600	18	36	1.7
9	593	12900	20700	476	18000	23100	17	49	2.2
10	550	8720	12900	402	17800	19300	18	53	2.6
11	483	5240	6830	325	14500	12700	18	52	2.5
12	420	3520	3990	272	8890	6530	21	39	2.2
13	390	2390	2520	236	8070	5140	25	24	1.6
14	417	1890	2130	190	7960	4080	30	33	2.7
15	530	5460	7810	156	6670	2810	38	46	4.7
16	368	10300	10200	135	4330	1580	39	43	4.5
17	295	6200	4940	117	2570	812	38	31	3.2
18	245	2000	1320	98	1370	363	39	29	3.1
19	200	1260	680	80	702	152	51	63	8.7
20	169	956	436	64	468	81	49	52	6.9
21	150	767	311	58	328	51	48	43	5.6
22	127	588	202	51	293	40	45	45	5.5
23	107	536	155	48	503	65	42	33	3.7
24	117	830	262	45	556	68	45	50	6.1
25	144	866	337	41	386	43	54	120	17
26	112	861	260	39	205	22	64	170	29
27	112	651	197	39	410	43	109	530	156
28	100	504	136	38	322	33	132	770	274
29	82	499	110	35	170	16	159	1200	515
30	72	488	95	36	176	17	240	3470	2250
31	93	651	163	38	180	18	---	---	---
TOTAL	11692	---	178474	5519	---	210046	1530	---	3355.5
YEAR	171107.0		3196100						

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY

LOCATION.--Lat 44°55'45", long 105°21'06", in NW¼SW¼ sec.13, T.57 N., R.71 W., Campbell County, Hydrologic Unit 10090208, on left bank 3.1 mi (5.0 km) upstream from Dry Creek, 5.0 mi (8.0 km) south of the Wyoming-Montana State line, and 20 mi (32 km) north of Weston.

DRAINAGE AREA.--1,230 mi^2 (3,190 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,410 ft (1,039 m), from topographic map.

REMARKS.--Water-discharge records poor. Diversion above station for irrigation of about 80 acres (32 hm^2) below. Beginning in August 1976, mine water has been pumped into the river in T.52 N., R.71 W., about 45 mi (72 km) upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,000 ft^3/s (28.3 m^3/s) Jan. 17, 1974, gage height, 8.05 ft (2.454 m); no flow July 18, Aug. 15-19, 1973, Oct. 19, 1974, July 27 to Aug. 13, 16, 18, Oct. 2-5, 11, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 511 ft^3/s (14.5 m^3/s) June 19, gage height, 6.54 ft (1.993 m); no flow Oct. 2-5, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.07	.04	.38	6.6	8.8	1.9	15	3.9	11	1.0	2.5
2	0	.07	.06	.27	8.0	6.6	2.9	8.6	3.1	7.2	7.8	1.9
3	0	.07	.09	.34	7.4	5.0	3.3	5.4	2.3	146	42	1.4
4	0	.07	.09	.42	5.2	4.7	2.8	4.1	1.7	45	21	1.1
5	0	.07	.31	.39	4.3	4.7	2.3	4.1	1.3	28	14	.80
6	.01	.04	.36	.33	3.9	5.0	1.9	3.5	1.1	18	14	.60
7	.01	.04	.41	.29	5.3	5.7	1.8	3.7	1.5	20	8.4	.40
8	.01	.04	.48	.34	6.1	6.4	1.7	2.9	7.5	36	5.2	.30
9	.01	.07	.42	.43	6.9	7.4	1.7	3.2	4.8	24	2.9	.20
10	.01	.07	.37	.52	17	8.6	1.6	2.7	3.3	15	2.1	.20
11	0	.09	.33	.61	29	6.3	1.6	2.5	2.1	22	3.0	.20
12	.01	.09	.29	.69	48	4.5	2.3	2.7	1.6	14	4.1	.20
13	.02	.09	.23	.78	75	4.9	2.8	2.4	1.5	61	8.4	.20
14	.02	.09	.15	.72	98	4.1	2.2	1.7	7.3	119	7.9	.20
15	.04	.12	.17	.94	84	3.7	2.0	2.2	110	71	4.1	.20
16	.04	.19	.14	1.4	72	4.2	1.8	2.7	355	45	6.5	.20
17	.04	.12	.11	1.4	73	4.9	5.6	2.4	239	22	8.1	.20
18	.04	.09	.14	1.5	64	5.6	76	1.9	378	16	8.1	.20
19	.04	.09	.15	1.7	46	4.1	29	2.7	304	30	7.2	.20
20	.04	.04	.15	3.1	41	3.2	12	3.2	156	19	6.5	.20
21	.04	.04	.16	5.4	26	3.5	5.8	4.6	87	17	5.4	.20
22	.04	.04	.17	7.0	20	6.3	4.3	2.9	64	10	4.8	.20
23	.04	.04	.18	8.6	18	4.3	3.6	5.8	91	6.0	3.0	.20
24	.07	.05	.21	6.0	17	2.9	3.0	7.9	111	3.9	1.8	.20
25	.07	.04	.26	3.7	20	2.4	2.7	5.0	73	2.6	.80	.20
26	.07	.04	.42	2.5	16	2.4	3.0	3.9	58	2.0	1.0	.16
27	.07	.04	.58	2.7	14	2.1	4.0	4.8	42	1.5	2.5	.18
28	.07	.03	.64	3.0	13	1.9	5.4	3.2	33	1.1	6.8	1.0
29	.07	.03	.69	3.9	12	2.2	6.3	2.5	28	.80	5.2	2.7
30	.04	.02	.75	4.3	---	2.2	12	3.7	20	.70	4.3	.91
31	.07	---	.60	4.8	---	1.9	---	3.0	---	.60	3.3	---
TOTAL	1.00	1.99	9.15	68.45	856.7	140.5	207.3	124.9	2192.0	815.40	221.20	17.35
MEAN	.032	.066	.30	2.21	29.5	4.53	6.91	4.03	73.1	26.3	7.14	.58
MAX	.07	.19	.75	8.6	98	8.8	76	15	378	146	42	2.7
MIN	0	.02	.04	.27	3.9	1.9	1.6	1.7	1.1	.60	.80	.16
AC-FT	2.0	3.9	18	136	1700	279	411	248	4350	1620	439	34

CAL YR 1975 TOTAL 5312.11 MEAN 14.6 MAX 172 MIN 0 AC-FT 10540
WTR YR 1976 TOTAL 4655.94 MEAN 12.7 MAX 378 MIN 0 AC-FT 9240

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	FECAL COLIFORM (COL. PER 100 ML)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
NOV											
07...	0915	.04	2800	8.0	5.0	5	10.9	--	B4	660	250
DEC											
05...	0915	A.31	5200	7.7	2.0	7	8.7	--	B1	1300	840
JAN											
09...	0915	A.43	4000	7.7	.5	7	10.8	--	<1	1100	630
FEB											
06...	0915	A3.9	--	7.6	.0	35	10.6	--	B1	400	170
MAR											
07...	0915	A5.7	2300	7.9	1.0	30	11.2	--	B1	740	420
APR											
09...	0830	A1.7	3400	8.1	8.0	30	10.8	--	22	930	580
MAY											
06...	0900	3.2	3000	8.8	12.0	50	9.2	2.6	--	710	310
06...	C0910	--	--	--	--	--	--	--	--	--	--
06...	1200	3.5	3000	8.8	12.5	55	9.2	3.2	--	650	260
06...	C1210	--	--	--	--	--	--	--	--	--	--
06...	1500	3.7	3100	8.8	16.0	45	9.0	2.6	--	660	270
06...	C1510	--	--	--	--	--	--	--	--	--	--
06...	1800	3.5	3100	8.8	17.0	45	8.8	--	--	650	270
06...	C1810	--	--	--	--	--	--	--	--	--	--
06...	2100	3.5	2950	8.6	15.0	45	8.4	3.0	--	670	300
06...	C2110	--	--	--	--	--	--	--	--	--	--
06...	2400	3.5	3100	8.6	12.5	50	8.4	--	--	670	290
07...	C0010	--	--	--	--	--	--	--	--	--	--
07...	0300	3.5	3000	8.7	11.0	45	8.4	2.6	--	700	330
07...	C0310	--	--	--	--	--	--	--	--	--	--
07...	0600	3.3	3000	8.8	9.0	45	8.3	--	--	710	330
07...	C0610	--	--	--	--	--	--	--	--	--	--
07...	0845	3.2	3300	8.2	10.0	35	9.6	--	67	680	300
JUN											
12...	0830	1.8	3000	8.0	16.5	60	7.4	--	B130	800	550
JUL											
10...	1000	16	810	7.5	23.0	5000	6.6	--	B2000	210	97
AUG											
06...	0900	15	2300	8.2	19.0	150	7.2	--	780	510	220
18...	1030	8.1	1940	8.4	20.5	60	7.3	--	--	510	230
18...	1330	8.6	2050	8.4	23.5	50	8.1	--	--	510	230
18...	1630	8.6	2120	8.4	26.5	55	8.3	--	--	500	230
18...	1930	8.4	1810	8.4	26.0	45	8.1	--	--	500	240
18...	2230	8.1	2150	8.2	25.0	45	7.2	--	--	510	240
19...	0130	7.7	2040	8.1	23.0	50	6.6	--	--	510	250
19...	0430	7.7	2250	8.1	21.0	55	6.1	--	--	510	240
19...	0730	7.4	2210	8.0	20.0	70	6.1	--	--	520	260
19...	1030	7.4	2210	8.4	21.5	60	6.8	--	--	510	250
SEP											
03...	0930	A1.4	3600	7.9	18.0	30	9.3	--	B52	1500	1300

A Daily mean discharge.
B Results based on colony count outside the acceptable range (non-ideal colony count).
C Sample collected 1.5 ft (0.5 m) below water surface.

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	DIS-SOLVED KJEL. NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOL-VED PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	TOTAL PHYTO-PLANK-TON (CELLS PER ML)	POTEN-TIAL ALGAL GROWTH BOTTLE TEST (MG/L)
NOV										
07...	--	.66	--	.71	.03	--	150	10	--	--
DEC										
05...	--	.79	--	.80	.01	--	220	40	--	--
JAN										
09...	--	.81	--	.96	.02	--	200	20	--	--
FEB										
06...	--	1.4	--	1.4	.06	--	160	180	--	--
MAR										
07...	--	.78	--	.85	.02	--	250	10	--	--
APR										
09...	--	.78	--	.78	.04	--	210	10	--	--
MAY										
06...	.75	.77	.77	.79	.07	.02	510	20	5200	.4
06...	--	--	--	--	--	--	--	--	8500	--
06...	--	.58	--	.58	.07	--	2	60	3900	--
06...	--	--	--	--	--	--	--	--	5000	--
06...	.69	.77	.71	.78	.07	.02	130	10	6200	.5
06...	--	--	--	--	--	--	--	--	4800	--
06...	--	.97	--	.98	.06	--	140	30	5700	--
06...	--	--	--	--	--	--	--	--	14000	--
06...	.65	.71	.67	.71	.07	.02	600	20	7200	.4
06...	--	--	--	--	--	--	--	--	7800	--
06...	--	.99	--	.99	.05	--	170	20	10000	--
07...	--	--	--	--	--	--	--	--	6600	--
07...	.44	.78	.46	.78	.06	.02	140	10	3000	.4
07...	--	--	--	--	--	--	--	--	4100	--
07...	--	.49	--	.49	.07	--	160	0	1500	--
07...	--	--	--	--	--	--	--	--	840	--
07...	--	--	--	--	.04	--	160	10	--	--
JUN										
12...	--	1.1	--	1.3	.06	--	270	30	--	--
JUL										
10...	--	8.5	--	9.9	.07	--	140	100	--	--
AUG										
06...	--	4.2	--	4.2	.15	--	170	40	--	--
18...	.34	1.3	.34	1.3	.08	.00	180	20	3500	.3
18...	--	1.1	--	1.2	.07	--	180	30	8500	--
18...	--	1.1	--	1.2	.06	--	180	40	3200	--
18...	--	1.1	--	1.2	.06	--	180	20	5200	--
18...	--	1.3	--	1.3	.07	--	180	30	2600	--
19...	--	.89	--	.89	.06	--	190	20	660	--
19...	--	1.2	--	1.2	.08	--	190	40	590	--
19...	--	.85	--	.85	.08	--	190	30	42000	--
19...	--	.92	--	.93	.08	--	190	30	1800	--
SEP										
03...	--	.75	--	.79	.02	--	1200	20	--	--

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	SODIUM AD-SORP-TION RATIO	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)
NOV										
07...	110	93	410	7.0	16	495	0	406	1100	11
DEC										
05...	260	160	590	7.1	25	565	0	463	2100	15
JAN										
09...	240	130	560	7.2	23	610	0	500	1800	24
FEB										
06...	87	45	220	4.8	13	253	17	236	660	6.0
MAR										
07...	150	83	280	4.5	18	389	0	319	1000	11
APR										
09...	190	110	450	6.4	21	428	0	351	1500	11
MAY										
06...	130	93	550	9.0	17	487	--	399	1400	12
06...	--	--	--	--	--	--	--	--	--	--
06...	120	86	510	8.7	16	486	--	399	1300	9.9
06...	--	--	--	--	--	--	--	--	--	--
06...	130	82	500	8.5	17	475	--	390	1300	11
06...	--	--	--	--	--	--	--	--	--	--
06...	130	80	510	8.7	17	464	--	381	1300	14
06...	--	--	--	--	--	--	--	--	--	--
06...	130	84	490	8.2	17	457	--	375	1300	15
06...	--	--	--	--	--	--	--	--	--	--
06...	130	84	490	8.2	15	462	--	379	1300	9.8
07...	--	--	--	--	--	--	--	--	--	--
07...	130	92	490	8.0	17	456	--	374	1300	10
07...	--	--	--	--	--	--	--	--	--	--
07...	130	93	480	7.9	17	458	--	376	1300	10
07...	--	--	--	--	--	--	--	--	--	--
07...	130	87	450	7.5	17	463	0	380	1300	10
JUN										
12...	140	110	420	6.5	24	308	0	253	1400	10
JUL										
10...	46	23	120	3.6	11	137	0	112	340	4.2
AUG										
06...	110	57	320	6.2	17	356	0	292	880	8.2
18...	110	56	290	5.6	16	334	0	274	790	7.8
18...	110	56	270	5.2	16	330	0	271	790	7.2
18...	110	54	270	5.3	16	324	0	266	780	8.2
18...	110	55	270	5.3	16	318	0	261	770	6.8
18...	110	56	260	5.0	17	319	0	262	800	8.5
19...	110	57	270	5.2	18	321	0	263	780	7.5
19...	110	56	270	5.2	17	321	0	263	820	7.8
19...	110	59	270	5.2	17	319	0	262	820	7.5
19...	110	56	270	5.2	17	313	0	257	800	8.5
SEP										
03...	320	180	270	3.0	43	265	0	217	1900	13

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)
NOV										
07...	.8	7.6	1990	2.71	.22	.05	--	.00	--	.66
DEC										
05...	.6	10	3440	4.68	2.88	.01	--	.04	--	.75
JAN										
09...	.8	11	3090	4.20	3.59	.15	--	.10	--	.71
FEB										
06...	.4	7.3	1180	1.60	12.4	.00	--	.03	--	1.4
MAR										
07...	.5	11	1760	2.39	27.1	.07	--	.02	--	.76
APR										
09...	.5	5.8	2500	3.40	11.5	.00	--	.03	--	.75
MAY										
06...	.6	5.5	2450	3.33	21.2	.02	.02	.02	.02	.75
06...	--	--	--	--	--	--	--	--	--	--
06...	.5	5.7	2290	3.11	21.6	.00	--	.02	--	.56
06...	--	--	--	--	--	--	--	--	--	--
06...	.6	5.5	2280	3.10	22.8	.01	.01	.02	.02	.75
06...	--	--	--	--	--	--	--	--	--	--
06...	.6	5.6	2290	3.11	21.6	.01	--	.02	--	.95
06...	--	--	--	--	--	--	--	--	--	--
06...	.6	5.8	2270	3.09	21.5	.00	.00	.02	.02	.69
06...	--	--	--	--	--	--	--	--	--	--
06...	.5	5.6	2260	3.07	21.4	.00	--	.05	--	.94
07...	--	--	--	--	--	--	--	--	--	--
07...	.6	5.6	2270	3.09	21.5	.00	.00	.02	.02	.76
07...	--	--	--	--	--	--	--	--	--	--
07...	.6	5.5	2260	3.07	20.1	.00	--	.02	--	.47
07...	--	--	--	--	--	--	--	--	--	--
07...	.5	5.5	2230	3.03	19.3	.21	--	.02	--	--
JUN										
12...	.5	6.4	2260	3.07	[illegible]	.17	--	.09	--	1.0
JUL										
10...	.4	8.9	621	.84	26.8	1.4	--	.18	--	8.3
AUG										
06...	.5	9.8	1580	2.15	64.0	.03	--	.05	--	4.2
18...	.6	8.1	1440	1.96	31.5	.04	.00	.01	.00	1.3
18...	.6	8.0	1420	1.93	33.0	.08	--	.07	--	1.0
18...	.6	8.0	1410	1.92	32.7	.07	--	.04	--	1.1
18...	.6	7.8	1390	1.89	31.5	.06	--	.07	--	1.0
18...	.6	7.8	1420	1.93	31.1	.04	--	.10	--	1.2
19...	.6	7.8	1410	1.92	29.3	.00	--	.01	--	.88
19...	.5	8.0	1450	1.97	30.1	.01	--	.05	--	1.2
19...	.5	8.1	1450	1.97	29.0	.00	--	.02	--	.83
19...	.5	8.2	1420	1.93	28.4	.01	--	.03	--	.89
SEP										
03...	.6	7.8	2870	3.90	10.8	.04	--	.01	--	.74

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	SUSPENDED ALUMINUM (AL) (UG/L)	DISSOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	SUSPENDED ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	SUSPENDED BERYLLIUM (BE) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	SUSPENDED CADMIUM (CD) (UG/L)
NOV												
07...	0915	220	220	0	1	0	1	0	0	0	10	10
JAN												
09...	0915	280	260	20	0	0	0	10	0	10	10	9
APR												
09...	0830	820	820	0	1	0	1	0	0	0	<10	<9
MAY												
06...	0900	1600	--	0	1	--	1	0	--	10	<10	--
06...	1500	1300	--	0	6	--	1	0	--	0	<10	--
06...	2100	1500	--	0	1	--	0	10	--	0	<10	--
07...	0300	1200	--	0	1	--	1	0	--	10	<10	--
JUL												
10...	1000	68000	68000	20	55	52	3	0	0	0	10	10
AUG												
18...	1030	2400	--	0	2	--	1	0	--	0	<10	--

DATE	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	SUSPENDED CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	SUSPENDED COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	SUSPENDED LEAD (PB) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)
NOV												
07...	0	6	0	6	10	10	0	280	0	0	0	40
JAN												
09...	1	0	0	0	10	8	2	380	<100	<97	3	50
APR												
09...	1	0	0	0	10	9	1	780	<100	<98	2	40
MAY												
06...	1	0	--	0	10	--	2	1600	<100	--	3	30
06...	0	10	--	10	10	--	2	1300	<100	--	3	40
06...	0	0	--	0	10	--	2	1500	<100	--	3	40
07...	0	0	--	0	10	--	2	1200	<100	--	3	40
JUL												
10...	0	100	100	0	140	140	5	63000	200	200	1	90
AUG												
18...	0	0	--	0	<10	--	2	2200	<100	--	1	50

DATE	SUSPENDED LITHIUM (LI) (UG/L)	DISSOLVED LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	SUSPENDED MANGANESE (MN) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	SUSPENDED MERCURY (HG) (UG/L)	DISSOLVED MERCURY (HG) (UG/L)	TOTAL MOLYBDENUM (MO) (UG/L)	SUSPENDED MOLYBDENUM (MO) (UG/L)	DISSOLVED MOLYBDENUM (MO) (UG/L)
NOV											
07...	0	40	570	60	510	.0	.0	.0	4	3	1
JAN											
09...	0	60	180	30	150	.0	.0	.0	4	0	4
APR											
09...	0	50	220	70	150	.0	.0	.0	2	0	2
MAY											
06...	--	40	180	--	90	.0	--	.0	2	--	1
06...	--	40	180	--	100	.0	--	.0	1	--	2
06...	--	40	190	--	100	.0	--	.0	1	--	2
07...	--	40	170	--	100	.0	--	.0	1	--	2
JUL											
10...	60	30	620	610	10	.8	.8	.0	2	2	0
AUG											
18...	--	40	180	--	20	.0	--	.0	3	--	1

DATE	TOTAL NICKEL (NI) (UG/L)	SUSPENDED NICKEL (NI) (UG/L)	DISSOLVED NICKEL (NI) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	SUSPENDED SELENIUM (SE) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	DISSOLVED VANADIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	SUSPENDED ZINC (ZN) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
NOV											
07...	<50	<46	4	1	0	2	.8	30	30	4	15
JAN											
09...	<50	<47	3	1	1	0	.5	30	20	10	8.1
APR											
09...	<50	<46	4	1	1	0	.5	30	20	10	6.7
MAY											
06...	<50	--	10	1	--	1	1.1	0	--	0	--
06...	<50	--	10	1	--	1	.8	0	--	0	--
06...	<50	--	10	1	--	1	1.1	10	--	0	--
07...	<50	--	10	1	--	1	.0	30	--	0	--
JUL											
10...	150	140	6	3	0	3	.0	520	520	0	40
AUG											
18...	<50	--	6	1	--	1	1.4	30	--	10	--

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM
NOV								
05...	1515	11.5	.07	103	.02	--	--	--
JAN								
16...	1125	.5	1.2	158	.51	--	--	--
FEB								
10...	1200	.0	A 17	60	2.8	--	--	--
MAR								
05...	1110	.0	A 4.7	180	2.3	--	--	--
APR								
07...	1625	15.5	A 1.8	126	.61	--	--	--
29...	1300	8.0	6.1	194	3.2	--	--	--
MAY								
06...	0900	12.0	3.2	191	1.7	--	--	--
06...	1200	12.5	3.5	205	1.9	--	--	--
06...	1500	16.0	3.7	183	1.8	--	--	--
06...	1630	16.0	3.7	153	1.5	--	--	--
06...	1800	17.0	3.5	190	1.8	--	--	--
06...	2100	15.0	3.5	181	1.7	--	--	--
06...	2400	12.5	3.5	148	1.4	--	--	--
07...	0300	11.0	3.5	162	1.5	--	--	--
07...	0600	9.0	3.3	174	1.6	--	--	--
19...	1710	24.0	3.2	120	1.0	--	--	--
JUN								
15...	1620	15.0	166	4260	1910	90	99	100
16...	1300	14.0	353	12200	11600	98	100	--
17...	1500	15.5	234	2720	1720	95	100	--
18...	1145	14.0	379	7000	7160	90	99	100
30...	1830	23.0	17	470	22	--	--	--
AUG								
04...	1530	24.5	14	716	27	--	--	--
17...	1530	--	12	209	6.8	--	--	--
18...	1030	20.5	8.1	197	4.3	--	--	--
18...	1330	23.5	8.6	194	4.5	--	--	--
18...	1630	26.5	8.6	170	3.9	--	--	--
18...	1930	26.0	8.4	181	4.1	--	--	--
18...	2230	25.0	8.1	216	4.7	--	--	--
19...	0130	23.0	7.7	218	4.5	--	--	--
19...	0430	21.0	7.7	232	4.8	--	--	--
19...	0730	20.0	7.4	221	4.4	--	--	--
19...	1030	21.5	7.4	226	4.1	--	--	--
SEP								
02...	1530	23.5	1.7	102	.47	--	--	--

A Daily mean discharge.

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM
AUG							
19...	1030	7.4	21.5	28	37	52	63

DATE	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM
AUG						
19...	65	69	76	83	91	100

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON
MAY 6, 1976
0900 HOURS

	_ORGANISM__NAME_____	_COMMON__NAME_____
	CHLOROPHYTA	GREEN ALGAE
	.CHLOROPHYCEAE	
	..OEDOGONIALES	
	...OEDOGONIACEAE	
O	....OEDOGONIUM	
	CHRYSOPHYTA	
	.BACILLARIOPHYCEAE	DIATOMS
	..PENNALES	PENNATE
	...CYMBELLACEAE	
O	....AMPHORA	
O	....CYMBELLA	
O	....EPITHEMIA	
O	....RHOPALODIA	
	...FRAGILARIACEAE	
O	....SYNEDRA	
	...GOMPHONEMATACEAE	
O	....GOMPHONEMA	
	...NAVICULACEAE	NAVICULOID
O	....AMPHIPRORA	
O	....CALONEIS	
O	....GYROSIGMA	
O	....MASTOGLOIA	
O	....NAVICULA	
O	....PINNULARIA	
	...NITZSCHIACEAE	
E	....NITZSCHIA	
	...SURIRELLACEAE	
O	....SURIRELLA	
	CYANOPHYTA	BLUE-GREEN ALGAE
	.MYXOPHYCEAE	
	..OSCILLATORIALES	FILAMENTOUS
	...OSCILLATORIACEAE	
O	....OSCILLATORIA	
O	....SPIRULINA	

NOTE: E - ESTIMATED DOMINANT ORGANISM; NOT ACTUALLY COUNTED
O - OBSERVED ORGANISM; NOT ACTUALLY COUNTED
ANALYSIS METHOD: SLIDE MOUNTING, 200-X MICROSCOPE

AUG. 18, 1976
1030 HOURS

	_ORGANISM__NAME_____	_COMMON__NAME_____
	CHRYSOPHYTA	
	.BACILLARIOPHYCEAE	DIATOMS
	..PENNALES	PENNATE
	...CYMBELLACEAE	
O	....AMPHORA	
O	....CYMBELLA	
O	....EPITHEMIA	
O	....RHOPALODIA	
	...FRAGILARIACEAE	
O	....SYNEDRA	
	...NAVICULACEAE	NAVICULOID
O	....DIPLONEIS	
O	....GYROSIGMA	
E	....NAVICULA	
	...NITZSCHIACEAE	
F	....NITZSCHIA	
	...SURIRELLACEAE	
O	....SURIRELLA	
	CYANOPHYTA	BLUE-GREEN ALGAE
	.MYXOPHYCEAE	
	..OSCILLATORIALES	FILAMENTOUS
	...NOSTOCACEAE	
O	....ANABAENA	
	...OSCILLATORIACEAE	
O	....LYNGBYA	
O	....OSCILLATORIA	

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAY 6, 1976
0900 HOURS
SAMPLED AT SURFACE
5,200 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
D	....ANKISTRODESMUS		880	17	
		TOTALS	880	17	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		98	2	
	..PENNALES	PENNATE			
	...NAVICULACEAE	NAVICULOID			
	....AMPHIPRORA		98	2	
	....CALONEIS		98	2	
	....GYROSIGMA		98	2	
	....NAVICULA		290	6	
	...NITZSCHIACEAE				
D	....NITZSCHIA		3,500	68	
	...SURIRELLACEAE				
L	....SURIRELLA			0	
		TOTALS	4,200	82	0.987=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
	..CHRYSOMONADALES				
	...CHROMULINACEAE				
	....CHRYSOCOCCUS		98	2	
		TOTALS	98	2	0.000=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
L	....EUGLENA			0	
L	....PHACUS			0	

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:

PHYL/DIV	0.657
CLASS	0.787
ORDER	0.916
FAMILY	1.385
GENERA	1.588

MAY 6, 1976
0910 HOURS
SAMPLED 1.5 FT BELOW SURFACE
8,500 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
D	....ANKISTRODESMUS		1,500	18	
		TOTALS	1,500	18	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		1,000	12	
	..PENNALES	PENNATE			
	...NAVICULACEAE	NAVICULOID			
	....AMPHIPRORA		250	3	
	....GYROSIGMA		250	3	
	....NAVICULA		500	6	
	...NITZSCHIACEAE				
D	....NITZSCHIA		4,800	56	
		TOTALS	6,800	80	1.395=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
	....EUGLENA		250	3	
		TOTALS	250	3	0.000=DIVERSITY

PHYL/DIV	0.855
CLASS	0.855
ORDER	1.336
FAMILY	1.787
GENERA	1.963

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAY 6, 1976
1500 HOURS
SAMPLED AT SURFACE
6,200 CELLS/ML

	ORGANISM NAME	COMMON NAME		CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE				
	.CHLOROPHYCEAE					
	..CHLOROCOCCALES					
	...OOCYSTACEAE					
D	....ANKISTRODESMUS			1,100	18	
			TOTALS	1,100	18	0.000=DIVERSITY
	CHRYSOPHYTA					
	.BACILLARIOPHYCEAE	DIATOMS				
	..CENTRALES	CENTRIC				
	...COSCINODISCACEAE					
	....CYCLOTELLA			230	4	
	..PENNALES	PENNATE				
	...ACHNANTHACEAE					
L	....COCCONEIS				0	
	...CYMBELLACEAE					
L	....RHOPALODIA				0	
	...NAVICULACEAE	NAVICULOID				
	....AMPHIPROPA			110	2	
L	....CALONEIS				0	
L	....GYROSIGMA				0	
O	....NAVICULA			910	15	
	...NITZSCHIACEAE					
D	....NITZSCHIA			3,300	53	
			TOTALS	4,500	74	1.150=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE				
	..CHRYSOMONADALES					
	...CHROMULINACEAE					
	....CHRYSOCOCCUS			450	7	
			TOTALS	450	7	0.000=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS				
	.EUGLENOPHYCEAE					
	..EUGLENALES					
	...EUGLENACEAE					
	....EUGLENA			110	2	
L	....TRACHELOMONAS				0	
			TOTALS	110	2	0.000=DIVERSITY

PHYL/DIV 0.810
CLASS 1.161
ORDER 1.370
FAMILY 1.915
GENERA 1.998

MAY 6, 1976
1510 HOURS
SAMPLED 1.5 FT BELOW SURFACE
4,800 CELLS/ML

	ORGANISM NAME	COMMON NAME		CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE				
	.CHLOROPHYCEAE					
	..CHLOROCOCCALES					
	...OOCYSTACEAE					
	....ANKISTRODESMUS			430	9	
	..VOLVOCALES					
	...CHLAMYDOMONADACEAE					
	....CHLAMYDOMONAS			220	5	
			TOTALS	650	14	0.918=DIVERSITY
	CHRYSOPHYTA					
	.BACILLARIOPHYCEAE	DIATOMS				
	..CENTRALES	CENTRIC				
	...COSCINODISCACEAE					
	....CYCLOTELLA			220	5	
	..PENNALES	PENNATE				
	...NAVICULACEAE	NAVICULOID				
	....AMPHIPRORA			220	5	
	....NAVICULA			650	14	
	...NITZSCHIACEAE					
D	....NITZSCHIA			3,000	64	
			TOTALS	4,100	88	1.192=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS				
	.EUGLENOPHYCEAE					
	..EUGLENALES					
	...EUGLENACEAE					
L	....EUGLENA				0	

PHYL/DIV 0.575
CLASS 0.575
ORDER 0.957
FAMILY 1.582
GENERA 1.730

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAY 6, 1976
1200 HOURS
SAMPLED AT SURFACE
3,900 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
D	....ANKISTRODESMUS		790	20	
		TOTALS	790	20	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		88	2	
	..PENNALES	PENNATE			
	...CYMBELLACEAE				
L	....RHOPALODIA			0	
	...NAVICULACEAE	NAVICULOID			
	....AMPHIPRORA		88	2	
L	....CALONEIS			0	
L	....GYROSIGMA			0	
	....NAVICULA		530	14	
	...NITZSCHIACEAE				
D	....NITZSCHIA		2,100	55	
	...SURIRELLACEAE				
	....SURIRELLA		88	2	
		TOTALS	2,900	75	1.240=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
	..CHRYSOMONADALES				
	...CHROMULINACEAE				
	....CHRYSOCOCCUS		88	2	
		TOTALS	88	2	0.000=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
	....EUGLENA		88	2	
		TOTALS	88	2	0.000=DIVERSITY

RHYL/DIV 0.880
CLASS 1.028
ORDER 1.175
FAMILY 1.864
GENERA 1.958

MAY 6, 1976
1210 HOURS
SAMPLED 1.5 FT BELOW SURFACE
5,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
D	....ANKISTRODESMUS		770	15	
		TOTALS	770	15	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		96	2	
	..PENNALES	PENNATE			
	...CYMBELLACEAE				
	....CYMBELLA		96	2	
	...NAVICULACEAE	NAVICULOID			
	....AMPHIPRORA		290	6	
L	....CALONEIS			0	
	....GYROSIGMA		96	2	
	....NAVICULA		380	8	
	...NITZSCHIACEAE				
D	....NITZSCHIA		3,300	65	
	...SURIRELLACEAE				
L	....SURIRELLA			0	
		TOTALS	4,200	85	1.238=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
	..CHRYSOMONADALES				
	...CHROMULINACEAE				
L	....CHRYSOCOCCUS			0	
	EUGLENOPHYTA	EUGLENOIDS			
	.CRYPTOPHYCEAE	CRYPTOMONADS			
	..CRYPTOMONIDALES				
	...CRYPTOMONADACEAE				
L	....CRYPTOMONAS			0	
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
L	....EUGLENA			0	

RHYL/DIV 0.619
CLASS 0.619
ORDER 0.752
FAMILY 1.451
GENERA 1.667

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAY 6, 1976
1800 HOURS
SAMPLED AT SURFACE
5,700 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
D	....ANKISTRODESMUS		1,200	21	
	...SCENEDESMACEAE				
L	....SCENEDESMUS			0	
		TOTALS	1,200	21	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		540	10	
	..PENNALES	PENNATE			
	...CYMBELLACEAE				
L	....AMPHORA			0	
L	....RHOPALODIA			0	
	...NAVICULACEAE	NAVICULOID			
	....AMPHIPRORA		180	3	
L	....CALONEIS			0	
L	....GYROSIGMA			0	
L	....MASTOGLOIA			0	
	....NAVICULA		720	13	
	...NITZSCHIACEAE				
L	....HANTZSCHIA			0	
D	....NITZSCHIA		2,800	49	
	...SURIRELLACEAE				
L	....SURIRELLA			0	
		TOTALS	4,200	75	1.404=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
	..CHRYSOMONADALES				
	...CHROMULINACEAE				
	....CHRYSOCOCCUS		180	3	
		TOTALS	180	3	0.000=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
L	....OSCILLATORIA			0	
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
	....EUGLENA		90	2	
		TOTALS	90	2	0.000=DIVERSITY

PHYL/DIV 0.847
CLASS 1.038
ORDER 1.449
FAMILY 1.971
GENERA 2.085

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAY 6, 1976
1810 HOURS
SAMPLED 1.5 FT BELOW SURFACE
14,000 CELLS/ML

	ORGANISM NAME	COMMON NAME		CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE				
	.CHLOROPHYCEAE					
	..CHLOROCOCCALES					
	...OOCYSTACEAE					
	....ANKISTRODESMUS			360	3	
			TOTALS	360	3	0.000=DIVERSITY
	CHRYSOPHYTA					
	.BACILLARIOPHYCEAE	DIATOMS				
	..CENTRALES	CENTRIC				
	...COSCINODISCACEAE					
D	....CYCLOTELLA			4,700	34	
	....MELOSIRA			1,400	11	
	..PENNALES	PENNATE				
	...CYMBELLACEAE					
	....EPITHEMIA			360	3	
	...NAVICULACEAE	NAVICULOID				
	....NAVICULA			360	3	
	...NITZSCHIACEAE					
D	....NITZSCHIA			4,000	29	
	...SURIRELLACEAE					
	....SURIRELLA			720	5	
			TOTALS	12,000	85	1.995=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE				
	..CHRYSOMONADALES					
	...CHROMULINACEAE					
	....CHRYSOCOCCUS			1,400	11	
			TOTALS	1,400	11	0.000=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS				
	.EUGLENOPHYCEAE					
	..EUGLENALES					
	...EUGLENACEAE					
	....EUGLENA			360	3	
			TOTALS	360	3	0.000=DIVERSITY

PHYL/DIV 0.350
CLASS 0.827
ORDER 1.667
FAMILY 2.155
GENERA 2.507

MAY 6, 1976
2100 HOURS
SAMPLED AT SURFACE
7,200 CELLS/ML

	ORGANISM NAME	COMMON NAME		CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE				
	.CHLOROPHYCEAE					
	..CHLOROCOCCALES					
	...OOCYSTACEAE					
D	....ANKISTRODESMUS			1,200	16	
			TOTALS	1,200	16	0.000=DIVERSITY
	CHRYSOPHYTA					
	.BACILLARIOPHYCEAE	DIATOMS				
	..CENTRALES	CENTRIC				
	...COSCINODISCACEAE					
D	....CYCLOTELLA			2,500	35	
	..PENNALES	PENNATE				
	...NAVICULACEAE	NAVICULOID				
	....AMPHIPROPA			200	3	
	....NAVICULA			590	8	
	...NITZSCHIACEAE					
D	....NITZSCHIA			2,700	38	
			TOTALS	6,100	84	1.530=DIVERSITY

PHYL/DIV 0.639
CLASS 0.639
ORDER 1.462
FAMILY 1.833
GENERA 1.921

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAY 6, 1976
2110 HOURS
SAMPLED 1.5 FT BELOW SURFACE
7,800 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
D	....ANKISTRODESMUS		2,100	27	
	...SCENEDESMACEAE				
D	....CRUCIGENIA		1,400	18	
		TOTALS	3,500	45	0.971=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		2,400	31	
	..PENNALES	PENNATE			
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		170	2	
L	....NEIDIUM			0	
	...NITZSCHIACEAE				
D	....NITZSCHIA		1,600	20	
		TOTALS	4,200	53	1.175=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
L	....OSCILLATORIA			0	
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
L	....EUGLENA			0	
	....TRACHELOMONAS		170	2	
		TOTALS	170	2	0.000=DIVERSITY

PHYL/DIV 1.126
CLASS 1.176
ORDER 1.648
FAMILY 2.184
GENERA 2.184

MAY 6, 1976
2400 HOURS
SAMPLED AT SURFACE
10,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
D	....ANKISTRODESMUS		2,300	23	
	...SCENEDESMACEAE				
	....SCENEDESMUS		380	4	
		TOTALS	2,700	27	0.592=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		3,300	32	
	..PENNALES	PENNATE			
	...NAVICULACEAE	NAVICULOID			
	....AMPHIPRORA		190	2	
L	....GYROSIGMA			0	
	....NEIDIUM		190	2	
	...NITZSCHIACEAE				
D	....NITZSCHIA		3,400	34	
		TOTALS	7,100	70	1.303=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
	..CHRYSOMONADALES				
	...CHROMULINACEAE				
	....CHRYSOCOCCUS		380	4	
		TOTALS	380	4	0.000=DIVERSITY

PHYL/DIV 0.833
CLASS 1.048
ORDER 1.742
FAMILY 2.076
GENERA 2.113

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAY 7, 1976
0010 HOURS
SAMPLED 1.5 FT BELOW SURFACE
6,600 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
D	....ANKISTRODESMUS		1,600	24	
	...SCENEDESMACEAE				
L	....SCENEDESMUS			0	
		TOTALS	1,600	24	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		1,300	20	
	..PENNALES	PENNATE			
	...NAVICULACEAE	NAVICULOID			
L	....AMPHIPRORA			0	
L	....CALONEIS			0	
L	....GYROSIGMA			0	
	....NAVICULA		260	4	
L	....PINNULARIA			0	
	...NITZSCHIACEAE				
D	....NITZSCHIA		1,500	22	
	...SURIRELLACEAE				
L	....SURIRELLA			0	
		TOTALS	3,100	46	1.334=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
	..CHRYSOMONADALES				
	...CHROMULINACEAE				
	....CHRYSOCOCCUS		260	4	
		TOTALS	260	4	0.000=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
D	....OSCILLATORIA		1,700	25	
		TOTALS	1,700	25	0.000=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
L	....EUGLENA			0	
	....TRACHELOMONAS		87	1	
		TOTALS	87	1	0.000=DIVERSITY
	PYRRHOPHYTA	FIRE ALGAE			
	.DINOPHYCEAE	DINOFLAGELLATES			
	..PERIDINIALES				
	...PERIDINIACEAE				
L	....PERIDINIUM			0	

PHYL/DIV 1.574
CLASS 1.774
ORDER 2.227
FAMILY 2.388
GENERA 2.388

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAY 7, 1976
0300 HOURS
SAMPLED AT SURFACE
3,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
D	....ANKISTRODESMUS		1,400	46	
		TOTALS	1,400	46	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...CYMBELLACEAE				
L	....RHOPALODIA			0	
	...NAVICULACEAE	NAVICULOID			
L	....AMPHIPRORA			0	
	....CALONEIS		110	4	
	....GYROSIGMA		110	4	
	....NAVICULA		110	4	
	...NITZSCHIACEAE				
D	....NITZSCHIA		800	27	
	...SURIRELLACEAE				
	....SURIRELLA		230	8	
		TOTALS	1,400	47	1.781=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
	..CHRYSOMONADALES				
	...CHROMULINACEAE				
	....CHRYSOCOCCUS		230	8	
		TOTALS	230	8	0.000=DIVERSITY

PHYL/DIV 0.996
CLASS 1.314
ORDER 1.314
FAMILY 1.953
GENERA 2.136

MAY 7, 1976
0310 HOURS
SAMPLED 1.5 FT BELOW SURFACE
3,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
D	....ANKISTRODESMUS		1,400	46	
		TOTALS	1,400	46	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...CYMBELLACEAE				
L	....RHOPALODIA			0	
	...NAVICULACEAE	NAVICULOID			
L	....AMPHIPRORA			0	
	....CALONEIS		110	4	
	....GYROSIGMA		110	4	
	....NAVICULA		110	4	
	...NITZSCHIACEAE				
D	....NITZSCHIA		800	27	
	...SURIRELLACEAE				
	....SURIRELLA		230	8	
		TOTALS	1,400	47	1.781=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
	..CHRYSOMONADALES				
	...CHROMULINACEAE				
	....CHRYSOCOCCUS		230	8	
		TOTALS	230	8	0.000=DIVERSITY

PHYL/DIV 0.996
CLASS 1.314
ORDER 1.314
FAMILY 1.953
GENERA 2.136

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAY 7, 1976
0600 HOURS
SAMPLED AT SURFACE
1,500 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
D	....ANKISTRODESMUS		390	26	
		TOTALS	390	26	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
L	....CYCLOTELLA			0	
	..PENNALES	PENNATE			
	...CYMBELLACEAE				
L	....CYMBELLA			0	
	...NAVICULACEAE	NAVICULOID			
	....AMPHIPRORA		79	5	
L	....CALONEIS			0	
	....GYROSIGMA		39	3	
L	....MASTOGLOIA			0	
	....NAVICULA		79	5	
	...NITZSCHIACEAE				
D	....NITZSCHIA		630	41	
	...SURIRELLACEAE				
L	....SURIRELLA			0	
		TOTALS	830	54	1.154=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
	..CHRYSOMONADALES				
	...CHROMULINACEAE				
D	....CHRYSOCOCCUS		320	21	
		TOTALS	320	21	0.000=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
L	....OSCILLATORIA			0	
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
L	....EUGLENA			0	

PHYL/DIV 0.821
CLASS 1.453
ORDER 1.453
FAMILY 1.880
GENERA 2.075

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAY 7, 1976
0610 HOURS
SAMPLED 1.5 FT BELOW SURFACE
1,500 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
D	....ANKISTRODESMUS		390	26	
		TOTALS	390	26	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
L	....CYCLOTELLA			0	
	..PENNALES	PENNATE			
	...CYMBELLACEAE				
L	....CYMBELLA			0	
	...NAVICULACEAE	NAVICULOID			
	....AMPHIPRORA		79	5	
L	....CALONEIS			0	
	....GYROSIGMA		39	3	
L	....MASTOGLOIA			0	
	....NAVICULA		79	5	
	...NITZSCHIACEAE				
D	....NITZSCHIA		630	41	
	...SURIRELLACEAE				
L	....SUPIRELLA			0	
		TOTALS	830	54	1.154=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
	..CHRYSOMONADALES				
	...CHROMULINACEAE				
D	....CHRYSOCOCCUS		320	21	
		TOTALS	320	21	0.000=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
L	....OSCILLATORIA			0	
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
L	....EUGLENA			0	

PHYL/DIV 0.821
CLASS 1.453
ORDER 1.453
FAMILY 1.880
GENERA 2.075

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
AUG. 18, 1976
1030 HOURS
3,500 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		280	8	
	...SCENEDESMACEAE				
	....SCENEDESMUS		380	11	
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		95	3	
		TOTALS	760	22	1.406=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...CYMBELLACEAE				
L	....CYMBELLA			0	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		190	5	
	...NITZSCHIACEAE				
D	....NITZSCHIA		1,300	38	
		TOTALS	1,500	43	0.544=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...NOSTOCACEAE				
D	....ANABAENA		570	16	
		TOTALS	570	16	0.000=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
	....EUGLENA		95	3	
D	....LEPOCINCLIS		570	16	
L	....PHACUS			0	
L	....TRACHELOMONAS			0	
		TOTALS	660	19	0.592=DIVERSITY

NOTE: D - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:

PHYL/DIV	1.881
CLASS	1.881
ORDER	1.998
FAMILY	2.420
GENERA	2.532

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
AUG. 18, 1976
1330 HOURS
8,500 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
D	....ANKISTRODESMUS		1,400	16	
	....OOCYSTIS		680	8	
		TOTALS	2,000	24	0.918=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		510	6	
	..PENNALES	PENNATE			
	...NITZSCHIACEAE				
D	....NITZSCHIA		4,200	50	
		TOTALS	4,700	56	0.491=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..CHROOCOCCALES	COCCOID			
	...CHROOCOCCACEAE				
	....ANACYSTIS		680	8	
		TOTALS	680	8	0.000=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
	....TRACHELOMONAS		1,000	12	
		TOTALS	1,000	12	0.000=DIVERSITY

PHYL/DIV 1.621
CLASS 1.621
ORDER 1.896
FAMILY 1.896
GENERA 2.117

AUG. 18, 1976
1630 HOURS
3,200 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
D	....ANKISTRODESMUS		1,600	50	
		TOTALS	1,600	50	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...NITZSCHIACEAE				
D	....NITZSCHIA		1,600	50	
		TOTALS	1,600	50	0.000=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
I	....OSCILLATORIA			0	
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
L	....EUGLENA			0	

PHYL/DIV 1.000
CLASS 1.000
ORDER 1.000
FAMILY 1.000
GENERA 1.000

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

AUG. 18, 1976
1930 HOURS
5,200 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		510	10	
D	....DICTYOSPHAERIUM		1,000	20	
	....TETRAEDRON		130	2	
	...SCENEDESMACEAE				
	....SCENEDESMUS		510	10	
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		260	5	
		TOTALS	2,400	47	2.037=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...NAVICULACEAE	NAVICULOID			
	....CALONEIS		130	2	
	...NITZSCHIACEAE				
D	....NITZSCHIA		1,400	27	
	...SURIRELLACEAE				
L	....CYMATOPLEURA			0	
		TOTALS	1,500	29	0.414=DIVERSITY
	.XANTHOPHYCEAE	YELLOW-GREEN ALGAE			
	..HETEROCOCCALES				
	...CHLOROTHECIACEAE				
	....OPHIOCYTIUM		130	2	
		TOTALS	130	2	0.000=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..CHROOCOCCALES	COCCOID			
	...CHROOCOCCACEAE				
D	....ANACYSTIS		1,000	20	
		TOTALS	1,000	20	0.000=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
	....EUGLENA		130	2	
		TOTALS	130	2	0.000=DIVERSITY

PHYL/DIV 1.630
CLASS 1.754
ORDER 1.979
FAMILY 2.427
GENERA 2.820

AUG. 18, 1976
2230 HOURS
2,600 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
D	....ANKISTRODESMUS		390	15	
	....TREUBARIA		97	4	
	...SCENEDESMACEAE				
D	....ACTINASTRUM		390	15	
		TOTALS	870	34	1.392=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		97	4	
	..PENNALES	PENNATE			
	...NAVICULACEAE	NAVICULOID			
	....CALONEIS		97	4	
	...NITZSCHIACEAE				
D	....NITZSCHIA		1,400	52	
	...SURIRELLACEAE				
	....SURIRELLA		97	4	
		TOTALS	1,600	64	0.952=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
	....TRACHELOMONAS		97	4	
		TOTALS	97	4	0.000=DIVERSITY

PHYL/DIV 1.125
CLASS 1.125
ORDER 1.328
FAMILY 2.054
GENERA 2.188

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

AUG. 19, 1976
0130 HOURS
660 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		76	11	
	....OICTYOSPHAERIUM		38	6	
	...SCENEOESMACEAE				
	....SCENEDESMUS		38	6	
	....TETRASTRUM		38	6	
		TOTALS	190	29	I.922=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...FRAGILARIACEAE				
	....FRAGILARIA		9	1	
	...NAVICULACEAE	NAVICULOID			
	....GYROSIGMA		19	3	
D	....NAVICULA		140	21	
	...NITZSCHIACEAE				
D	....NITZSCHIA		150	23	
		TOTALS	320	48	1.423=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..CHROOCOCCALES	COCCOID			
	...CHROOCOCCACEAE				
	....ANACYSTIS		19	3	
	..OSCILLATORIALES	FILAMENTOUS			
	...NOSTOCACEAE				
L	....ANABAENA			0	
	...OSCILLATORIACEAE				
O	....LYNGBYA		110	17	
		TOTALS	130	20	0.592=DIVERSITY
	PYRRHOPHYTA	FIRE ALGAE			
	.DINOPHYCEAE	DINOFLAGELLATES			
	..PERIDINIALES				
	...PERIDINIACEAE				
	....PERIDINIUM		19	3	
		TOTALS	19	3	0.000=DIVERSITY

PHYL/DIV 1.633
CLASS 1.633
ORDER 1.752
FAMILY 2.593
GENERA 2.992

AUG. 19, 1976
0430 HOURS
590 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		590	100	
		TOTALS	590	100	0.000=DIVERSITY

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
AUG. 19, 1976
0730 HOURS
42,000 CELLS/ML

ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
CHLOROPHYTA	GREEN ALGAE			
.CHLOROPHYCEAE				
..CHLOROCOCCALES				
...OOCYSTACEAE				
....ANKISTRODESMUS		1,100	3	
....DICTYOSPHAERIUM		1,500	3	
...SCENEDESMACEAE				
....CRUCIGENIA		1,500	3	
	TOTALS	4,000	9	1.573=DIVERSITY
CHRYSOPHYTA				
.BACILLARIOPHYCEAE	DIATOMS			
..PENNALES	PENNATE			
...NITZSCHIACEAE				
....NITZSCHIA		1,100	3	
	TOTALS	1,100	3	0.000=DIVERSITY
CYANOPHYTA	BLUE-GREEN ALGAE			
.MYXOPHYCEAE				
..OSCILLATORIALES	FILAMENTOUS			
...OSCILLATORIACEAE				
D ....OSCILLATORIA		36,000	87	
	TOTALS	36,000	87	0.000=DIVERSITY
EUGLENOPHYTA	EUGLENOIDS			
.EUGLENOPHYCEAE				
..EUGLENALES				
...EUGLENACEAE				
....TRACHELOMONAS		360	1	
	TOTALS	360	1	0.000=DIVERSITY

PHYL/DIV 0.696
CLASS 0.696
ORDER 0.696
FAMILY 0.786
GENERA 0.846

AUG. 19, 1976
1030 HOURS
1,800 CELLS/ML

ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
CHRYSOPHYTA				
.BACILLARIOPHYCEAE	DIATOMS			
..CENTRALES	CENTRIC			
...COSCINODISCACEAE				
....CYCLOTELLA		120	7	
..PENNALES	PENNATE			
...NITZSCHIACEAE				
D ....NITZSCHIA		1,600	87	
	TOTALS	1,700	94	0.371=DIVERSITY
EUGLENOPHYTA	EUGLENOIDS			
.EUGLENOPHYCEAE				
..EUGLENALES				
...EUGLENACEAE				
....EUGLENA		120	7	
	TOTALS	120	7	0.000=DIVERSITY

PHYL/DIV 0.353
CLASS 0.353
ORDER 0.700
FAMILY 0.700
GENERA 0.700

06326050 MIZPAH CREEK AT OLIVE, MT

LOCATION.--Lat 45°32'30", long 105°31'40", in SW¼ sec.26, T.3 S., R.50 E., Powder River County, Hydrologic Unit 10090210, at bridge on U.S. Highway 212 at Olive, approximately 1 mi (1.6 km) downstream from YT Creek.

DRAINAGE AREA.--129 mi^2 (334 km^2).

PERIOD OF RECORD.--October 1975 to September 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
NOV												
19...	1300	.10	4700	8.0	1.0	2.0	1	13.6	111	.6	2300	1800
DEC												
11...	1000	.22	5570	7.5	-2.0	.5	1	1.4	11	1.4	2400	1900
JAN												
15...	0845	.10	4560	7.6	.0	.0	3	.0	0	3.4	2200	1600
FEB												
12...	1540	.37	4730	7.5	8.0	.0	5	.0	0	2.0	2100	1500
MAR												
11...	1300	.30	3350	7.5	-5.5	.0	1	3.2	25	1.2	1500	1100
APR												
14...	1330	.30	3000	8.0	14.0	16.0	2	14.4	164	1.6	1200	910
MAY												
11...	1600	.19	3380	8.1	10.0	15.0	2	12.6	140	1.3	1400	1100
JUN												
09...	1025	.05	3400	8.1	26.0	22.5	4	9.8	127	6.9	1500	1300

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
NOV											
19...	320	360	600	5.5	22	535	0	3200	28	.2	8.2
DEC											
11...	370	360	600	5.3	20	658	0	3000	29	.3	16
JAN											
15...	380	310	510	4.7	19	762	0	2500	3.8	.4	22
FEB											
12...	360	290	470	4.5	19	681	0	2500	26	.3	22
MAR											
11...	260	200	320	3.6	11	470	0	1700	16	.3	15
APR											
14...	200	180	280	3.5	12	406	0	1500	20	.2	.5
MAY											
11...	210	220	340	3.9	11	350	0	1900	18	.3	.4
JUN											
09...	200	250	350	3.9	11	287	0	1900	17	.2	6.6

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)
NOV											
19...	4800	6.53	1.30	.02	.00	1.7	1.7	1.7	.04	430	40
DEC											
11...	4720	6.42	2.80	.00	.01	1.3	1.3	1.3	.03	420	100
JAN											
15...	4120	5.60	1.11	.02	.13	1.1	1.2	1.2	.21	340	370
FEB											
12...	4020	5.47	4.02	.01	1.2	1.8	3.0	3.0	.24	350	230
MAR											
11...	2750	3.74	2.23	.04	.24	1.1	1.3	1.3	.04	0	160
APR											
14...	2390	3.25	1.94	.00	.00	1.0	1.0	1.0	.04	290	80
MAY											
11...	2870	3.90	1.47	.03	.04	1.1	1.1	1.1	.04	350	60
JUN											
09...	2880	3.92	.39	.02	.09	.91	1.0	1.0	.05	530	40

06326050 MIZPAH CREEK AT DLIVE, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	DISSOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)
NOV											
19...	1300	90	0	2	2	10	10	<10	0	<0	20
JAN											
15...	0845	80	--	1	--	0	--	<10	--	0	--
APR											
14...	1330	20	--	1	--	0	--	<10	--	10	--

DATE	TOTAL COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	DISSOLVED LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)
NOV										
19...	20	0	260	<100	1	120	110	70	90	.0
JAN										
15...	20	--	940	<100	--	110	--	7100	--	.0
APR										
14...	10	--	180	<100	--	60	--	60	--	.0

DATE	DISSOLVED MERCURY (HG) (UG/L)	TOTAL MOLYBDENUM (MO) (UG/L)	DISSOLVED MOLYBDENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DISSOLVED NICKEL (NI) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	DISSOLVED VANADIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
NOV										
19...	.0	1	1	<50	4	0	0	.4	30	30
JAN										
15...	--	0	--	<50	--	0	--	--	30	--
APR										
14...	--	0	--	<50	--	0	--	--	0	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
NOV					
19...	1300	2.0	.10	17	.01
DEC					
11...	1000	.5	.22	38	.02
JAN					
15...	0845	.0	.10	384	.10
FEB					
12...	1540	.0	.37	377	.38
MAR					
11...	1300	.0	.30	35	.03
APR					
14...	1330	16.0	.30	10	.01
MAY					
11...	1600	15.0	.19	6	.00
JUN					
09...	1025	22.5	.05	160	.02

06326200 MIZPAH CREEK NEAR VOLBORG, MT

LOCATION.--Lat 45°56'00", long 105°23'40", in SW¼ sec.9, T.2 N., R.51 E., Custer County, Hydrologic Unit 10090210, at bridge on county road, approximately 2 mi (3.2 km) downstream from Spring Creek and 15.1 mi (24.3 km) northeast of Volborg.

DRAINAGE AREA.--510 mi² (1,321 km²).

PERIOD OF RECORD.--October 1975 to September 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
NOV												
13...	1300	.10	3300	7.8	19.0	4.0	1	9.4	80	.5	680	150
DEC												
09...	1600	.10	2710	7.7	6.5	2.0	2	8.5	69	.4	650	150
JAN												
13...	1445	.14	2830	7.8	4.0	1.0	3	7.4	58	.4	610	100
FEB												
11...	1440	4.2	1370	7.6	13.0	1.0	20	6.0	47	6.7	240	40
MAR												
09...	1430	1.4	2120	7.8	7.0	5.0	10	11.1	97	3.1	420	120
APR												
13...	1500	.25	2740	7.8	24.0	20.0	5	9.6	118	1.3	620	110
MAY												
10...	1930	8.9	3120	8.3	24.0	19.0	30	6.4	77	2.3	560	150
JUN												
08...	1745	.45	3100	8.0	30.5	29.5	10	8.9	131	1.1	600	160
JUL												
13...	1600	2.3	2810	8.1	28.0	26.5	1	8.1	114	1.9	610	200
AUG												
11...	1335	.08	2720	7.9	26.0	25.0	5	8.2	110	1.0	700	250

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
NOV											
13...	150	73	460	7.7	9.3	637	0	1100	9.5	.4	16
DEC											
09...	140	72	420	7.2	8.8	608	0	1000	8.9	.3	15
JAN											
13...	130	70	420	7.4	9.1	621	0	1000	7.0	.3	14
FEB											
11...	45	31	200	5.6	10	244	0	470	5.8	.2	5.5
MAR											
09...	77	55	320	6.8	9.2	369	0	820	7.2	.3	7.8
APR											
13...	130	71	410	7.2	9.9	614	0	1000	8.1	.3	15
MAY											
10...	86	85	530	9.7	10	501	0	1300	9.5	.4	6.1
JUN											
08...	100	84	540	9.6	10	531	0	1300	9.1	.3	6.5
JUL											
13...	100	87	540	9.5	12	502	0	1300	9.8	.4	4.7
AUG											
11...	140	84	430	7.1	11	545	0	1100	8.8	.3	14

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)
NOV											
13...	2130	2.90	.58	.01	.02	.29	.31	.32	.00	350	20
DEC											
09...	1970	2.68	.53	.00	.02	.31	.33	.33	.00	270	30
JAN											
13...	1960	2.67	.74	.02	.04	.09	.13	.15	.00	350	320
FEB											
11...	888	1.21	10.1	.03	.00	1.7	1.7	1.7	.16	240	230
MAR											
09...	1480	2.01	5.59	.01	.02	1.5	1.5	1.5	.09	240	110
APR											
13...	1950	2.65	1.32	.00	--	--	--	--	.02	300	30
MAY											
10...	2270	3.09	54.5	.01	.02	.90	.92	.93	.10	290	10
JUN											
08...	2310	3.14	2.81	.01	.01	.67	.68	.69	.04	420	10
JUL											
13...	2300	3.13	14.3	.02	.01	.75	.76	.78	.07	370	60
AUG											
11...	2060	2.80	.45	.01	.00	.25	.25	.26	.01	350	100

06326200 MIZPAH CREEK NEAR VOLBORG, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	DISSOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)
NOV											
13...	1300	60	40	1	1	10	0	20	1	45	0
JAN											
13...	1445	50	--	0	--	0	--	<10	--	0	--
APR											
13...	1500	150	--	1	--	0	--	<10	--	0	--
JUL											
13...	1600	350	--	3	--	0	--	<10	--	0	--

DATE	TOTAL COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	DISSOLVED LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)
NOV										
13...	10	0	280	<100	7	30	40	280	270	.0
JAN										
13...	10	--	360	<100	--	40	--	970	--	.1
APR										
13...	10	--	600	<100	--	30	--	780	--	.0
JUL										
13...	10	--	500	<100	--	40	--	150	--	.0

DATE	DISSOLVED MERCURY (HG) (UG/L)	TOTAL MOLYBDENUM (MO) (UG/L)	DISSOLVED MOLYBDENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DISSOLVED NICKEL (NI) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	DISSOLVED VANADIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
NOV										
13...	.0	2	0	<50	3	0	0	.1	0	0
JAN										
13...	--	0	--	<50	--	0	--	--	30	--
APR										
13...	--	2	--	<50	--	0	--	--	0	--
JUL										
13...	--	2	--	50	--	1	--	--	20	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
NOV					
13...	1300	4.0	.10	61	.02
DEC					
09...	1600	2.0	.10	12	.00
JAN					
13...	1445	1.0	.14	44	.02
FEB					
11...	1440	1.0	4.2	19	.22
MAR					
09...	1430	5.0	1.4	23	.09
APR					
13...	1500	20.0	.25	57	.04
MAY					
10...	1930	19.0	8.9	70	1.7
JUN					
08...	1745	29.5	.45	92	.11
JUL					
13...	1600	26.5	2.3	50	.31
AUG					
11...	1335	25.0	.08	30	.01

06326300 MIZPAH CREEK NEAR MIZPAH, MT

LOCATION.--Lat 46°15'39", long 105°17'34", in NW¼NE¼SW¼ sec.24, T.6 N., R.51 E., Custer County, Hydrologic Unit 10090210, on left bank 10 ft (3 m) upstream from county bridge, 1.0 mi (1.6 km) upstream from mouth, and 1.6 mi (2.6 km) northwest of Mizpah.

DRAINAGE AREA.--797 mi^2 (2,064 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,490 ft (759 m), from topographic map.

REMARKS.--Water-discharge records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,920 ft^3/s (54.4 m^3/s) May 6, 1975, gage height, 9.80 ft (2.987 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 150 ft^3/s (4.25 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 15	1745	ice jam		*6.46	1.969	June 15	2115	435	12.3	4.75	1.448
May 6	--	188	5.32	3.50	1.067	July 3	0130	*597	16.9	5.41	1.649

No flow on many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.60	.30	0	.20	.40	16	1.4	27	3.9	6.3	0	
2	.60	.30	0	.10	.30	12	1.3	12	4.3	16	0	
3	.75	.45	.10	0	.20	10	1.1	8.4	3.9	102	0	
4	.60	.45	.20	0	.10	8.0	1.0	7.6	2.8	7.3	0	
5	.45	.60	.20	0	0	6.0	1.0	57	23	6.1	0	
6	.45	.45	.20	0	0	5.0	.70	125	6.8	4.5	.03	
7	.45	.30	.30	0	2.0	9.0	.58	47	10	5.0	0	
8	.45	.30	.80	0	5.0	15	.70	18	7.3	25	0	
9	.45	.15	1.4	0	10	21	.86	12	5.3	5.0	0	
10	.45	.30	.90	0	20	20	20	10	3.5	3.0	0	
11	.45	.30	.60	0	70	18	34	9.0	2.6	2.8	0	
12	.30	.30	.40	0	80	16	15	57	2.3	2.1	0	
13	.30	.45	.20	0	85	14	1.5	42	2.1	1.7	0	
14	.30	.45	0	0	80	12	.78	21	71	1.5	0	
15	.30	.60	0	0	75	10	1.7	19	226	1.3	0	
16	.30	.60	0	.20	70	12	2.8	11	186	1.1	0	
17	.45	.60	0	.40	65	15	56	8.4	86	1.2	0	
18	.45	.60	0	.50	60	15	37	7.3	126	1.3	0	
19	.45	.60	0	.50	55	12	18	6.8	74	1.5	0	
20	.45	.60	.10	.50	50	6.0	9.7	6.1	43	1.6	0	
21	.60	.40	.20	.50	45	2.5	7.5	5.7	27	1.5	0	
22	6.8	.40	.30	.50	40	2.0	4.8	5.3	18	1.6	0	
23	7.0	.30	.30	.40	35	1.3	3.9	5.2	18	1.3	0	
24	2.5	.10	.30	.20	30	1.9	2.1	5.0	18	1.3	0	
25	1.5	0	.30	.20	28	1.7	2.3	5.3	20	1.1	0	
26	1.4	0	.60	.20	25	1.4	1.6	5.3	13	.86	0	
27	.75	0	1.0	.40	22	1.3	1.1	6.6	11	1.2	0	
28	.45	0	1.2	.50	20	1.3	3.3	5.5	7.5	.58	0	
29	.30	0	1.0	.60	18	.42	13	4.5	7.0	.46	0	
30	.45	0	.80	.60	---	1.1	57	4.1	6.8	.08	0	
31	.30	---	.40	.50	---	1.3	---	4.1	---	.02	0	---
TOTAL	31.05	9.90	11.80	7.00	991.00	268.22	301.72	568.2	1036.1	206.30	.03	0
MEAN	1.00	.33	.38	.23	34.2	8.65	10.1	18.3	34.5	6.65	.001	0
MAX	7.0	.60	1.4	.60	85	21	57	125	226	102	.03	0
MIN	.30	0	0	0	0	.42	.58	4.1	2.1	.02	0	0
AC-FT	62	20	23	14	1970	532	598	1130	2060	409	.06	0

CAL YR 1975 TOTAL 12095.85 MEAN 33.1 MAX 1780 MIN 0 AC-FT 23990
WTR YR 1976 TOTAL 3431.32 MEAN 9.38 MAX 226 MIN 0 AC-FT 6810

06326300 MIZPAH CREEK NEAR MIZPAH, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD --October 1975 to September 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
17...	0930	.46	3400	8.6	6.0	4.5	15	10.0	84	2.4	270	0
NOV												
13...	1100	.42	4100	8.6	8.0	.0	25	13.2	99	1.2	360	0
DEC												
09...	1315	1.4	3580	8.3	6.0	.0	10	12.8	96	.6	470	0
FEB												
11...	1130	70	319	7.5	8.5	.5	160	8.0	61	7.2	59	0
MAR												
09...	1145	21	1360	8.0	11.0	.0	500	11.8	89	2.7	210	0
APR												
13...	1230	.67	2320	8.4	25.0	22.0	25	10.2	128	1.9	300	0
MAY												
10...	1630	9.8	1310	8.1	27.5	23.5	160	9.0	117	2.8	180	0
JUN												
08...	1310	6.7	1120	7.6	30.0	27.5	5	6.8	94	5.1	76	0
JUL												
13...	1010	1.9	3050	8.7	22.5	23.0	35	8.0	103	2.2	460	55

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
OCT											
17...	39	42	670	18	8.9	507	28	1300	12	.4	1.1
NOV											
13...	66	48	720	16	9.3	638	14	1300	13	.4	4.0
DEC											
09...	82	65	690	14	9.3	788	0	1300	11	.4	7.0
FEB											
11...	14	5.8	43	2.4	4.7	87	0	73	3.0	.1	3.8
MAR											
09...	42	25	220	6.6	6.0	278	0	460	4.1	.3	5.3
APR											
13...	56	38	440	11	8.8	493	18	810	7.4	.4	2.3
MAY											
10...	35	22	230	7.5	7.2	263	0	470	3.9	.4	7.1
JUN											
08...	20	6.3	230	12	6.0	302	0	380	3.9	.7	8.3
JUL											
13...	69	69	570	12	13	453	18	1300	9.7	.4	4.0

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED IRON (FE) (UG/L)
OCT											
17...	2350	3.20	2.92	.01	.04	.96	1.0	1.0	.03	430	30
NOV											
13...	2490	3.39	2.82	.02	.04	1.1	1.1	1.1	.02	450	60
DEC											
09...	2550	3.47	9.64	.00	.01	.60	.61	.61	.02	300	0
FEB											
11...	191	.26	36.1	.13	.98	.92	1.9	2.0	.25	160	170
MAR											
09...	900	1.22	51.0	.15	.09	1.6	1.7	1.9	.21	180	70
APR											
13...	1620	2.20	2.93	.01	--	--	--	--	.06	320	10
MAY											
10...	906	1.23	24.0	.01	.02	1.3	1.3	1.3	.17	190	60
JUN											
08...	805	1.09	14.6	1.7	.04	13	13	15	6.0	440	170
JUL											
13...	2280	3.10	11.7	.07	.01	.96	.97	1.0	.12	430	70

06326300 MIZPAH CREEK NEAR MIZPAH, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	DISSOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	DISSOLVED BARIUM (BA) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	DISSOLVED BISMUTH (BI) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)
OCT											
17...	0930	740	--	1	--	--	10	--	--	10	--
NOV											
13...	1100	380	40	1	1	90	20	0	<15	20	0
APR											
13...	1230	670	--	1	--	--	0	--	--	<10	--
JUL											
13...	1010	1200	--	3	--	--	0	--	--	10	--

DATE	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED GALLIUM (GA) (UG/L)	DISSOLVED GERMANIUM (GE) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED LEAD (PB) (UG/L)
OCT										
17...	40	--	--	20	--	--	--	680	<100	--
NOV										
13...	10	10	<15	20	10	<7	<20	380	<100	4
APR										
13...	0	--	--	10	--	--	--	780	<100	--
JUL										
13...	0	--	--	10	--	--	--	1400	<100	--

DATE	TOTAL LITHIUM (LI) (UG/L)	DISSOLVED LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED MERCURY (HG) (UG/L)	TOTAL MOLYBDENUM (MO) (UG/L)	DISSOLVED MOLYBDENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DISSOLVED NICKEL (NI) (UG/L)
OCT										
17...	40	--	40	--	.0	--	4	--	0	--
NOV										
13...	40	30	70	10	.0	.0	5	0	50	9
APR										
13...	20	--	120	--	.1	--	3	--	<50	--
JUL										
13...	50	--	120	--	.0	--	4	--	50	--

DATE	TOTAL SELENIUM (SE) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	DISSOLVED SILVER (AG) (UG/L)	DISSOLVED STRONTIUM (SR) (UG/L)	DISSOLVED TIN (SN) (UG/L)	DISSOLVED TITANIUM (TI) (UG/L)	DISSOLVED VANADIUM (V) (UG/L)	DISSOLVED ZIRCONIUM (ZR) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT										
17...	0	--	--	--	--	--	--	--	10	--
NOV										
13...	1	1	<2	1100	<15	<10	1.7	<40	10	4
APR										
13...	0	--	--	--	--	--	--	--	150	--
JUL										
13...	1	--	--	--	--	--	--	--	20	--

06326300 MIZPAH CREEK NEAR MIZPAH, MT--Continued

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	DIS-SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS-PENDED GROSS ALPHA AS U-NAT. (UG/L)	DIS-SOLVED GROSS BETA AS CS-137 (PC/L)	SUS-PENDED GROSS BETA AS CS-137 (PC/L)	DIS-SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS-PENDED GROSS BETA AS SR90 /Y90 (PC/L)	DIS-SOLVED RA-226 (RADON METHOD) (PC/L)	DIS-SOLVED URANIUM (DIRECT FLUORO-METRIC) (PC/L)	TOTAL FILT-RABLE RESIDUE (MG/L)	TOTAL NON-FILT-RABLE RESIDUE (MG/L)
NOV											
13...	1100	45	1.6	20	6.9	16	5.8	.10	24	2600	48

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
OCT					
17...	0930	4.5	.46	23	.03
NOV					
13...	1100	.0	.42	29	.03
DEC					
09...	1315	.0	1.4	42	.16
FEB					
11...	1130	.5	70	398	75
MAR					
09...	1145	.0	21	890	50
APR					
13...	1230	22.0	.67	52	.09
MAY					
10...	1630	23.5	9.8	269	7.1
JUN					
08...	1310	27.5	6.7	15800	286
JUL					
13...	1010	23.0	1.9	149	.76

06326500 POWDER RIVER NEAR LOCATE, MT

LOCATION.--Lat 46°26'56", long 105°18'44", in NW¼SW¼ sec.14, T.8 N., R.51 E., Custer County, Hydrologic Unit 10090209, on left bank 1.5 mi (2.4 km) downstream from bridge on U.S. Highway 12 at present site of Locate (5 mi, 8 km, west of former site of Locate), 1.5 mi (2.4 km) upstream from Locate Creek, and 25 mi (40 km) east of Miles City.

DRAINAGE AREA.--13,194 mi² (34,172 km²). Area at site used prior to Oct. 1, 1965, 13,189 mi² (34,160 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1938 to current year.

REVISED RECORDS.--WSP 926: 1939. WSP 1309: 1938-39(M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 2,390 ft (728 m), by barometer. Prior to July 11, 1947, nonrecording gage at bridge 1.5 mi (2.4 km) upstream, and July 11, 1947, to Sept. 30, 1965, water-stage recorder at sites near bridge at different datum. Oct. 1, 1965, to Oct. 4, 1966, nonrecording gage, and Oct. 5, 1966, to Apr. 15, 1969, water-stage recorder at site 200 ft (61 m) upstream at present datum.

REMARKS.--Water-discharge records fair except those for winter period, which are poor. Some regulation by three reservoirs in Wyoming with combined usable capacity of 36,800 acre-ft (45.4 hm³). Diversions for irrigation of about 74,500 acres (302 km²) above station.

AVERAGE DISCHARGE.--38 years, 620 ft³/s (17.56 m³/s), 449,200 acre-ft/yr (554 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 31,000 ft³/s (878 m³/s) Feb. 19, 1943, gage height, 11.23 ft (3.423 m), site and datum then in use, from rating curve extended above 17,000 ft³/s (481 m³/s); no flow Jan. 16 to Feb. 12, Feb. 22-24, 1950, July 27, Sept. 21-27, Oct. 1, 1960, Sept. 4-8, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge observed, 3,480 ft³/s (98.6 m³/s) June 15, gage height, 4.91 ft (1.497 m); maximum gage height, 6.25 ft (1.905 m) Feb. 25 (backwater from ice); minimum daily discharge, 20 ft³/s (0.57 m³/s) Sept. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	424	150	310	320	400	496	760	1380	1090	76	32
2	56	418	160	295	350	350	496	718	1580	1010	67	28
3	58	406	170	280	410	300	508	781	2040	1200	62	27
4	54	436	185	260	450	340	490	816	1760	894	121	27
5	51	406	200	250	415	390	460	838	1530	910	89	28
6	56	412	210	220	360	450	448	830	1700	1290	67	27
7	69	412	230	180	330	550	466	732	1840	1340	326	28
8	92	382	250	150	340	640	454	606	1840	1220	606	24
9	115	360	270	110	390	823	442	669	1800	1050	466	23
10	127	350	300	155	465	802	436	704	1570	998	376	20
11	139	350	330	180	520	626	442	655	1490	788	376	21
12	136	350	350	190	600	450	454	830	1380	620	326	21
13	148	348	345	165	700	500	490	990	1260	514	265	22
14	159	348	340	150	840	570	544	942	1540	418	242	22
15	162	320	330	160	1150	500	557	1120	3280	400	204	42
16	173	305	315	190	1300	550	550	1250	2790	454	176	29
17	188	310	300	230	1200	900	788	1340	3030	571	152	21
18	200	376	290	240	1050	1000	809	1440	2820	472	127	21
19	192	348	280	240	920	1420	767	1500	3030	418	112	21
20	208	348	275	240	800	1300	746	1510	2540	315	102	24
21	234	285	270	235	750	1110	795	1310	1910	200	82	24
22	280	270	265	230	700	910	902	1340	1570	216	69	24
23	337	250	260	225	650	781	802	1570	1420	188	56	26
24	290	230	260	220	1200	760	732	1790	1460	173	62	31
25	280	220	270	200	1400	718	620	1880	2890	145	53	34
26	280	200	280	180	950	697	557	1800	2930	121	45	34
27	280	180	290	190	600	620	496	1910	2400	110	39	39
28	305	170	310	210	500	550	520	1950	1790	115	36	41
29	342	155	325	230	480	550	578	1800	1580	107	34	46
30	370	140	330	270	---	532	655	1680	1270	89	32	54
31	376	---	320	290	---	532	---	1440	---	87	34	---
TOTAL	5811	9509	8460	6675	20140	20621	17500	37501	59420	17583	4880	861
MEAN	187	317	273	215	694	665	583	1210	1981	567	157	28.7
MAX	376	436	350	310	1400	1420	902	1950	3280	1340	606	54
MIN	51	140	150	110	320	300	436	606	1260	87	32	20
AC-FT	11530	18860	16780	13240	39950	40900	34710	74380	117900	34880	9680	1710

CAL YR 1975 TOTAL 295446 MEAN 809 MAX 9600 MIN 32 AC-FT 586000
WTR YR 1976 TOTAL 208961 MEAN 571 MAX 3280 MIN 20 AC-FT 414500

06326500 POWDER RIVER NEAR LOCATE, MT--Continued
(National Stream Quality Accounting Network)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951-63, 1975 to current year.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1951 to July 1963, October 1974 to current year.
WATER TEMPERATURES: December 1950 to July 1963, October 1974 to current year.
SUSPENDED SEDIMENT DISCHARGE: March 1950 to September 1953, October 1974 to current year.
REMARKS.--During high flow sediment samples taken at U.S. Highway 12 bridge, 1.5 mi (2.4 km) upstream from gaging station. Flow affected by reservoirs and diversions for irrigation upstream from station.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 9,270 micromhos Dec. 16, 1955; minimum daily, 231 micromhos July 18, 1963.
WATER TEMPERATURES: Maximum daily, 30.0°C July 26, 1959; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily, 60,000 mg/L Aug. 6, 1953; minimum daily (1974-76), 17 mg/L Dec. 3, 1974.
SEDIMENT LOADS: Maximum daily, 1,020,000 tons (925,000 tonnes) May 26, 1952; minimum daily, less than 1 ton (.91 tonne) on several days during September 1950.
EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,900 micromhos Sept. 22, 23, 30; minimum daily, 750 micromhos June 16.
WATER TEMPERATURES: Maximum daily, 27.0°C June 14; minimum daily, 0.0°C on many days during November to March.
SEDIMENT CONCENTRATIONS: Maximum daily, 22,300 mg/L June 6, Aug. 10; minimum daily, 19 mg/L Oct. 6.
SEDIMENT LOADS: Maximum daily, 119,000 tons (108,000 tonnes) June 15; minimum daily, 2.8 tons (2.5 tonnes) Sept. 14.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	FECAL COLIFORM (COL. PER 100 ML)	FECAL STREPTOCOCCI KF AGAR (COL. PER 100 ML)
OCT											
22...	1415	290	2180	8.3	1.5	4.5	5800	12.4	104	1300	2100
NOV											
19...	1510	354	1700	8.5	.0	2.0	200	12.4	101	110	330
DEC											
17...	1030	300	2400	8.1	-23.0	.0	140	12.5	94	160	640
JAN											
29...	1000	230	2340	7.8	9.5	.0	40	7.1	53	40	260
FEB											
28...	1100	500	1380	8.0	-1.0	.0	130	12.4	93	12	100
MAR											
17...	0830	900	2030	8.2	5.5	.5	120	12.8	97	4	97
APR											
29...	1500	571	2000	8.3	14.0	8.0	720	10.8	99	50	200
MAY											
18...	0915	1240	1090	8.4	18.0	15.5	1800	8.4	92	680	230
JUN											
16...	1330	2420	760	7.7	21.0	17.5	2400	8.0	91	19000	8600
JUL											
21...	0900	261	1600	8.3	25.0	21.0	1600	7.7	94	550	750
AUG											
18...	1015	127	2230	8.2	24.0	19.5	2400	7.8	93	660	860
SEP											
22...	0915	24	2900	8.3	14.0	12.0	40	9.5	96	103	133

DATE	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)
OCT											
22...	470	250	100	53	290	5.8	7.1	270	0	2.2	670
NOV											
19...	520	290	120	54	210	4.0	6.1	288	0	1.5	600
DEC											
17...	690	410	160	71	260	4.3	6.9	345	0	4.4	710
JAN											
29...	600	280	140	61	310	5.5	7.4	390	0	9.9	660
FEB											
28...	340	160	80	34	180	4.3	4.8	216	0	3.5	400
MAR											
17...	520	300	120	53	270	5.2	6.8	267	0	2.7	690
APR											
29...	510	290	120	50	290	5.6	6.7	263	0	2.1	810
MAY											
18...	270	0	65	27	130	3.4	4.7	343	0	2.2	330
JUN											
16...	180	25	48	14	110	3.6	4.5	186	0	5.9	220
JUL											
21...	510	350	130	46	170	3.3	7.9	204	0	1.6	630
AUG											
18...	590	400	150	52	280	5.0	10	236	0	2.4	840
SEP											
22...	730	510	150	87	420	6.8	12	271	0	2.2	1200

06326500 POWDER RIVER NEAR LOCATE, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT											
22...	140	.4	5.8	1530	2.08	1200	.16	.61	.77	.72	20
NOV											
19...	110	.4	6.5	1290	1.75	1230	.16	1.0	1.2	.51	--
DEC											
17...	160	.4	8.8	1650	2.24	1340	.34	.96	1.3	.17	--
JAN											
29...	190	.4	10	1660	2.26	1030	.61	.88	1.5	.08	7.8
FEB											
28...	100	.4	6.6	972	1.32	1310	.39	1.3	1.7	.14	--
MAR											
17...	110	.4	7.3	1440	1.96	3500	.43	.86	1.3	.15	--
APR											
29...	99	.5	6.4	1500	2.04	2310	.47	3.2	3.7	1.1	25
MAY											
18...	61	.4	8.6	790	1.07	2650	.39	7.3	7.7	1.9	--
JUN											
16...	23	.3	7.9	513	.70	3350	.58	4.2	4.8	3.1	--
JUL											
21...	44	.4	8.8	1180	1.60	832	.61	4.1	4.7	1.0	30
AUG											
18...	79	.7	8.1	1530	2.08	525	.54	5.0	5.5	2.1	--
SEP											
22...	120	.4	10	2200	2.99	143	.01	.80	.81	.08	--

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
OCT												
22...	1415	12	1	10	1	40	10	<50	0	50	7	28000
JAN												
29...	1000	0	0	<10	0	0	0	50	0	10	2	2200
APR												
29...	1500	30	0	<10	1	40	10	<50	0	70	6	55000
JUL												
21...	0900	40	2	<10	1	80	0	100	0	100	4	73000

DATE	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT											
22...	20	200	4	600	5	.2	.0	2	2	150	20
JAN											
29...	20	<100	2	60	10	.3	.0	2	2	50	0
APR											
29...	10	<100	2	1000	0	.1	.1	2	2	280	20
JUL											
21...	20	<100	2	1200	0	.3	.0	2	2	310	0

06326500 POWDER RIVER NEAR LOCATE, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2680	1950	2410	2270	1600	1480	2200	2230	1200	1310	2450	2600
2	2650	1920	2380	2330	1280	1700	2250	2230	1240	1340	2350	2610
3	2610	1890	2500	2300	1200	---	2220	1990	1210	1380	2400	2690
4	2580	1820	2560	2310	1290	1920	2240	1990	1340	1420	1570	2690
5	2590	1840	2340	2350	1520	2040	2290	2000	1750	1570	2300	2700
6	2600	1810	2300	2460	1730	2050	2290	1870	1720	1640	2630	2710
7	2630	1770	2250	2510	2100	2020	2300	1830	1250	1530	2540	2710
8	2630	1800	2180	2590	2150	1990	2260	1910	1120	1140	2100	2720
9	2660	1800	2150	2680	2100	1900	2220	1970	1000	1220	2210	2720
10	2790	1750	2060	2680	1680	1810	2200	1980	1010	1430	2400	2710
11	2770	1790	2090	2630	1450	1700	2250	1930	1210	1510	2130	2700
12	2760	1740	2090	2640	1420	1850	2260	1630	1050	1760	2020	2700
13	2800	1750	1960	2600	1120	1960	2220	1710	964	1660	1920	2670
14	2790	1700	1900	2600	990	2030	2140	1530	955	1600	2100	2680
15	2690	1710	1960	2630	858	2060	2110	1430	866	1530	2200	2560
16	2650	1780	1950	2630	800	2150	2110	1440	750	1500	2210	2360
17	---	1810	2160	2600	911	1930	1940	1230	1120	1460	2150	2580
18	2580	1880	2400	2610	1050	1830	1690	1180	1080	1420	2060	2670
19	2570	1800	2560	2540	1200	1950	1870	980	1170	1530	2080	2650
20	2500	1630	2590	2430	1410	1850	1950	900	1460	1560	2170	2720
21	2410	2240	2590	2350	1460	2090	1970	975	1720	1570	2280	2820
22	2290	1540	2620	2300	1440	2110	1870	945	1410	1610	2300	2900
23	2250	2500	2640	2380	1340	2060	1780	931	1260	1720	2360	2900
24	2280	2450	2670	2440	1360	2010	1980	972	1300	1830	2180	2840
25	2340	2570	2660	2410	1400	1980	2150	1040	1300	1940	2400	2800
26	2310	2570	2620	2380	1440	2120	2250	979	1440	2000	2420	2790
27	2330	2570	2590	2330	1410	2240	2250	871	1620	2120	2480	2800
28	2290	2600	1920	2350	1410	2210	2240	929	1240	2300	2550	2780
29	2250	2610	2370	2310	1530	2150	2040	1000	1080	2350	2580	2840
30	2220	2480	2260	---	---	2150	2000	1140	1180	2390	2580	2900
31	2160	---	2120	---	---	2140	---	1110	---	2560	2580	---
MONTH	2520	2000	2320	2470	1400	1980	2120	1450	1230	1670	2280	2720
YEAR	MAX	2900	MIN	750	MEAN	2010						

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	3.5	0.0	0.0	0.5	0.0	7.0	10.0	20.0	20.0	20.5	16.0
2	8.0	4.5	0.0	0.0	0.5	0.0	5.0	8.0	21.0	22.0	20.5	16.0
3	8.5	5.5	0.0	0.0	0.5	---	2.0	9.0	21.0	19.5	19.0	---
4	11.0	5.5	0.0	0.0	0.0	0.0	4.5	12.0	21.5	22.0	19.5	14.0
5	7.5	5.5	0.0	0.5	0.5	0.0	7.0	12.0	22.0	23.0	20.0	15.0
6	8.5	4.5	0.0	0.0	0.5	0.0	9.0	12.0	21.0	23.5	19.5	16.0
7	10.5	4.0	0.0	0.0	0.5	0.5	10.5	12.0	21.0	24.0	19.5	14.0
8	10.5	1.5	0.0	0.0	0.5	0.5	10.0	14.0	23.0	23.0	21.0	9.5
9	4.5	0.5	0.0	0.0	0.5	0.5	10.0	15.0	23.5	25.0	20.0	8.0
10	7.0	0.5	0.0	0.5	0.5	1.0	12.5	16.0	23.0	23.5	20.0	10.5
11	7.5	0.5	0.0	0.0	0.5	1.0	8.0	17.0	23.0	25.0	19.0	10.5
12	9.0	0.5	0.0	0.5	0.5	0.0	10.0	11.0	20.0	24.0	19.5	15.5
13	7.5	0.5	0.5	0.0	0.5	0.5	14.0	10.0	16.0	21.0	20.0	18.0
14	6.0	0.5	0.0	0.0	0.5	0.5	14.0	15.0	27.0	20.5	20.0	14.0
15	4.0	0.5	0.5	0.5	0.5	0.5	12.0	14.0	13.0	18.5	19.0	15.5
16	7.0	1.5	0.0	0.5	0.5	0.5	13.0	13.0	17.0	17.5	19.5	15.5
17	---	2.5	0.0	0.5	0.5	0.5	5.0	15.0	16.0	21.5	18.5	17.0
18	7.5	2.5	0.0	0.5	0.5	1.0	5.0	16.0	15.0	23.5	19.5	17.0
19	7.5	1.0	0.5	0.5	0.5	2.0	8.5	17.0	16.5	23.0	21.0	13.5
20	10.5	0.5	0.5	0.5	0.5	1.0	7.0	18.0	19.0	21.0	21.5	11.0
21	8.5	0.5	0.0	0.5	0.5	2.0	10.0	17.0	20.0	21.0	19.0	10.0
22	6.0	0.5	0.0	0.5	0.5	1.5	8.0	17.0	21.0	21.5	19.0	12.0
23	3.5	0.0	0.0	0.5	0.5	4.5	10.0	16.5	19.0	20.0	18.5	9.5
24	3.0	0.0	0.5	0.5	0.5	2.5	8.0	15.0	16.0	23.0	19.5	12.0
25	1.5	0.0	0.5	0.5	0.5	6.0	9.0	15.0	16.5	22.0	20.5	11.5
26	3.5	0.0	0.0	0.0	0.5	4.0	9.0	14.5	15.0	20.0	19.0	13.5
27	2.5	0.0	0.5	0.5	0.5	4.0	6.0	15.0	15.0	21.5	13.5	5.0
28	0.5	0.0	0.5	0.5	0.0	4.0	5.5	17.5	16.0	16.5	12.0	6.0
29	1.0	0.0	0.5	0.5	0.0	4.0	6.5	18.5	17.0	17.0	14.5	9.5
30	3.0	0.0	0.5	0.5	---	2.5	7.0	17.5	19.0	18.0	17.5	10.5
31	3.5	---	0.5	0.5	---	4.5	---	16.5	---	19.0	16.0	---
MONTH	6.0	1.5	0.0	0.5	0.5	1.5	8.5	14.5	19.0	21.5	19.0	12.5
YEAR	MAX	27.0	MIN	0.0	MEAN	9.0						

06326500 POWDER RIVER NEAR LOCATE, MT--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .002 MM
OCT							
22...	1415	4.5	290	1930	1510	--	--
NOV							
19...	1510	2.0	354	1130	1080	50	--
DEC							
17...	1030	.0	300	637	516	48	--
JAN							
29...	1000	.0	230	170	106	64	--
FEB							
28...	1100	.0	500	921	1240	29	--
MAR							
17...	0830	.5	900	517	1260	40	--
APR							
29...	1500	8.0	571	3060	4720	--	--
MAY							
18...	0915	15.5	1240	9040	30300	--	--
JUN							
16...	1330	17.5	2420	9350	61100	--	--
JUL							
21...	0900	21.0	261	4170	2940	--	--
AUG							
18...	1015	19.5	127	5270	1810	--	76
SEP							
22...	0915	12.0	24	139	9.0	92	--

DATE	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM
OCT						
22...	68	73	79	91	99	100
NOV						
19...	--	--	--	--	--	--
DEC						
17...	--	--	--	--	--	--
JAN						
29...	--	--	--	--	--	--
FEB						
28...	--	--	--	--	--	--
MAR						
17...	--	--	--	--	--	--
APR						
29...	53	63	75	89	99	100
MAY						
18...	37	50	77	94	99	100
JUN						
16...	49	55	82	99	100	--
JUL						
21...	71	78	84	95	100	--
AUG						
18...	87	97	98	99	100	--
SEP						
22...	--	--	--	--	--	--

06326500 POWDER RIVER NEAR LOCATE, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	54	32	4.7	424	1430	1640	150	438	177
2	56	26	3.9	418	1420	1600	160	251	108
3	58	26	4.1	406	1380	1510	170	268	123
4	54	21	3.1	436	1520	1790	185	542	271
5	51	21	2.9	406	1300	1430	200	440	238
6	56	19	2.9	412	1150	1280	210	180	102
7	69	41	7.6	412	1150	1280	230	228	142
8	92	121	30	382	1150	1190	250	231	156
9	115	960	298	360	940	914	270	249	182
10	127	379	130	350	1100	1040	300	329	266
11	139	261	98	350	860	813	330	336	299
12	136	145	53	350	1050	992	350	377	356
13	148	152	61	348	690	648	345	578	538
14	159	145	62	348	740	695	340	330	303
15	162	151	66	320	720	622	330	209	186
16	173	185	86	305	650	535	315	323	275
17	188	257	130	310	640	536	300	289	234
18	200	300	162	376	1030	1050	290	195	153
19	192	276	143	348	850	799	280	131	99
20	208	349	196	348	800	752	275	147	109
21	234	428	270	285	1070	823	270	145	106
22	280	750	567	270	1230	897	265	142	102
23	337	1940	1770	250	232	157	260	158	111
24	290	1580	1240	230	380	236	260	159	112
25	280	1010	764	220	70	42	270	170	124
26	280	885	669	200	76	41	280	194	147
27	280	950	718	180	112	54	290	208	163
28	305	955	786	170	168	77	310	231	193
29	342	1030	951	155	344	144	325	200	175
30	370	1370	1370	140	310	117	330	134	119
31	376	1400	1420	---	---	---	320	150	130
TOTAL	5811	---	12069.2	9509	---	23704	8460	---	5799
		JANUARY			FEBRUARY			MARCH	
1	310	98	82	320	232	200	400	476	514
2	295	157	125	350	183	173	350	120	113
3	280	167	126	410	182	201	300	77	62
4	260	192	135	450	96	117	340	73	67
5	250	167	113	415	274	307	390	78	82
6	220	166	99	360	80	78	450	182	221
7	180	124	60	330	77	69	550	210	312
8	150	182	74	340	102	94	640	218	377
9	110	165	55	390	123	130	823	321	713
10	155	173	72	465	154	193	802	510	1100
11	180	128	62	520	178	250	626	396	669
12	190	136	70	600	165	267	450	102	124
13	165	134	60	700	226	427	500	139	188
14	150	134	54	840	298	676	570	150	231
15	160	143	62	1150	411	1280	500	142	192
16	190	152	78	1300	342	1200	550	178	264
17	230	119	74	1200	211	684	900	1020	2480
18	240	128	83	1050	166	471	1000	1500	4050
19	240	161	104	920	181	450	1420	4600	17600
20	240	139	90	800	142	307	1300	5400	19000
21	235	134	85	750	118	239	1110	4390	13200
22	230	165	102	700	113	214	910	3180	7810
23	225	140	85	650	167	293	781	2750	5800
24	220	126	75	1200	152	492	760	2880	5910
25	200	135	73	1400	198	748	718	2620	5080
26	180	128	62	950	405	1040	697	2830	5330
27	190	143	73	600	570	923	620	2500	4180
28	210	154	87	500	593	801	550	2300	3420
29	230	142	88	480	489	634	550	2400	3560
30	270	143	104	---	---	---	532	2080	2990
31	290	260	204	---	---	---	532	2000	2870
TOTAL	6675	---	2716	20140	---	12958	20621	---	108509

06326500 POWDER RIVER NEAR LOCATE, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	496	1950	2610	760	3520	7220	1380	6620	24700
2	496	1730	2320	718	2930	5680	1580	7560	32300
3	508	1600	2190	781	2910	6140	2040	10800	59500
4	490	1600	2120	816	3530	7780	1760	15000	71300
5	460	1550	1930	838	4120	9320	1530	19400	80100
6	448	1550	1870	830	5130	11500	1700	22300	102000
7	466	1580	1990	732	4200	8300	1840	20600	102000
8	454	1410	1730	606	2790	4560	1840	14300	71000
9	442	1230	1470	669	2900	5240	1800	9180	44600
10	436	1210	1420	704	2800	5320	1570	7990	33900
11	442	1280	1530	655	2410	4260	1490	7480	30100
12	454	1360	1670	830	3500	7840	1380	6600	24600
13	490	1230	1630	990	5010	13400	1260	6200	21100
14	544	1600	2350	942	4100	10400	1540	7780	32300
15	557	1770	2660	1120	4400	13300	3280	13400	119000
16	550	1680	2790	1250	6090	20600	2790	11000	82900
17	788	9650	20500	1340	6000	21700	3030	6900	56400
18	809	10500	22900	1440	6790	26400	2820	5400	41100
19	767	3900	8080	1500	6020	24400	3030	7950	65000
20	746	3170	6390	1510	5590	22800	2540	12900	88500
21	795	3020	6480	1310	5300	18700	1910	13800	71200
22	902	4020	9790	1340	5220	18900	1570	9330	39500
23	802	3300	7150	1570	5790	24500	1420	6850	26300
24	732	4400	8700	1790	7000	33800	1460	5600	22100
25	620	6210	10400	1880	8500	43100	2890	10300	80400
26	557	6300	9470	1800	7520	36500	2930	17800	141000
27	496	4720	6320	1910	5800	29900	2400	18500	120000
28	520	3800	5340	1950	8450	44500	1790	10200	49300
29	578	2810	4390	1800	8100	39400	1580	6200	26400
30	655	2630	5000	1680	8200	37200	1270	4580	15700
31	---	---	---	1440	6440	25000	---	---	---
TOTAL	17500	---	183190	37501	---	587660	59420	---	1774300

		JULY			AUGUST			SEPTEMBER	
1	1090	4700	13800	76	280	57	32	178	15
2	1010	4900	13400	67	275	50	28	148	11
3	1200	6810	22100	62	1250	209	27	138	10
4	894	4280	10300	121	8100	2650	27	152	11
5	910	4380	10800	89	3400	817	28	148	11
6	1290	5580	19400	67	900	163	27	96	7.0
7	1340	4610	16700	326	1500	1320	28	137	10
8	1220	4520	14900	606	9800	16000	24	84	5.4
9	1050	4620	13100	466	15400	19400	23	77	4.8
10	998	7450	20100	376	22300	22600	20	83	4.5
11	788	6700	14300	376	19300	19600	21	121	6.9
12	620	5800	9710	326	15800	13900	21	55	3.1
13	514	7240	10000	265	12600	9020	22	53	3.1
14	418	4820	5440	242	11900	7780	22	47	2.8
15	400	3440	3720	204	10200	5620	42	370	42
16	454	3400	4170	176	7300	3470	29	530	41
17	571	4300	6630	152	5600	2300	21	230	13
18	472	5750	7330	127	5250	1800	21	166	9.4
19	418	6600	7450	112	4200	1270	21	157	8.9
20	315	9500	8080	102	2980	821	24	160	10
21	260	3700	2600	82	1870	414	24	147	9.5
22	216	2220	1290	69	1200	224	24	129	8.4
23	188	1320	670	56	955	144	26	122	8.6
24	173	1080	504	62	1380	231	31	167	14
25	145	800	313	53	675	97	34	170	16
26	121	630	206	45	460	56	34	187	17
27	110	560	166	39	310	33	39	197	21
28	115	530	165	36	270	26	41	180	20
29	107	470	136	34	245	22	49	204	25
30	89	380	91	32	180	16	54	237	35
31	87	350	82	34	173	16	---	---	---
TOTAL	17583	---	237653	4880	---	130126	861	---	404.4
YEAR	208961.0		3059089						

06326500 POWDER RIVER NEAR LOCATE, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON

Date	Length of exposure (days)	Biomass (g/m^2) Dry weight	Ash weight	Chlorophyll a (mg/m^2)	Chlorophyll b (mg/m^2)	Biomass pigment ratio	Sampling method
Oct 22	27	.000	.000	.000	.000	0	Polyethylene strip
Apr 29	43	4.85	3.85	.000	.000	0	
Jul 21	35	25.1	9.92	.000	.000	0	

PHYTOPLANKTON
OCT. 22, 1975
1415 HOURS
38,000 CELLS/ML

ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
CHLOROPHYTA	GREEN ALGAE			
.CHLOROPHYCEAE				
..CHLOROCOCCALES				
...SCENEDESMACEAE				
D ....SCENEDESMUS		11,000	29	
	TOTALS	11,000	29	0.000=DIVERSITY
CHRYSOPHYTA				
.BACILLARIOPHYCEAE	DIATOMS			
..PENNALES	PENNATE			
...NAVICULACEAE	NAVICULOID			
D ....NAVICULA		6,500	17	
...NITZSCHIACEAE				
D ....NITZSCHIA		21,000	54	
	TOTALS	27,000	71	0.795=DIVERSITY

NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:

PHYL/DIV	0.863
CLASS	0.863
ORDER	0.863
FAMILY	1.431
GENERA	1.431

NOV. 19, 1975
1510 HOURS
14,000 CELLS/ML

ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
CHLOROPHYTA	GREEN ALGAE			
.CHLOROPHYCEAE				
..CHLOROCOCCALES				
...SCENEDESMACEAE				
D ....SCENEDESMUS		6,900	48	
	TOTALS	6,900	48	0.000=DIVERSITY
CHRYSOPHYTA				
.BACILLARIOPHYCEAE	DIATOMS			
..PENNALES	PENNATE			
...ACHNANTHACEAE				
....COCCONEIS		430	3	
...CYMBELLACEAE				
....CYMBELLA		430	3	
...NAVICULACEAE	NAVICULOID			
1 ....GYROSIGMA			0	
O ....NAVICULA		2,200	15	
...NITZSCHIACEAE				
D ....NITZSCHIA		2,200	15	
...SURIRELLACEAE				
....CYMATOPLEURA		430	3	
	TOTALS	5,600	39	1.914=DIVERSITY
CYANOPHYTA	BLUE-GREEN ALGAE			
.MYXOPHYCEAE				
..OSCILLATORIALES	FILAMENTOUS			
...OSCILLATORIACEAE				
....OSCILLATORIA		1,700	12	
	TOTALS	1,700	12	0.000=DIVERSITY

PHYL/DIV	1.405
CLASS	1.405
ORDER	1.405
FAMILY	2.159
GENERA	2.159

06326500 POWDER RIVER NEAR LOCATE, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
DEC. 17, 1975
1030 HOURS
2,200 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...SCENEDESMACEAE				
D	....SCENEDESMUS		1,100	50	
		TOTALS	1,100	50	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...NAVICULACEAE	NAVICULOID			
L	....CALONEIS			0	
O	....NAVICULA		1,100	50	
	...NITZSCHIACEAE				
L	....NITZSCHIA			0	
		TOTALS	1,100	50	0.000=DIVERSITY

PHYL/DIV 1.000
CLASS 1.000
ORDER 1.000
FAMILY 1.000
GENERA 1.000

JAN. 29, 1976
1000 HOURS
460 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...SCENEDESMACEAE				
D	....SCENEDESMUS		70	15	
		TOTALS	70	15	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...NAVICULACEAE	NAVICULOID			
O	....NAVICULA		160	35	
	...NITZSCHIACEAE				
O	....NITZSCHIA		160	35	
	...SURIRELLACEAE				
O	....CYMATOPLEURA		70	15	
		TOTALS	390	85	1.502=DIVERSITY

PHYL/DIV 0.619
CLASS 0.619
ORDER 0.619
FAMILY 1.890
GENERA 1.890

FEB. 28, 1976
1100 HOURS
630 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		39	6	
	...SCENEDESMACEAE				
	....SCENEDESMUS		79	12	
		TOTALS	120	18	0.918=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		39	6	
	...NAVICULACEAE	NAVICULOID			
L	....GYROSIGMA			0	
O	....NAVICULA		280	44	
	...NITZSCHIACEAE				
D	....NITZSCHIA		200	31	
		TOTALS	510	81	1.296=DIVERSITY

PHYL/DIV 0.696
CLASS 0.696
ORDER 0.696
FAMILY 1.921
GENERA 1.921

06326500 POWDER RIVER NEAR LOCATE, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

MAR. 17, 1976
0830 HOURS
300 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		19	6	
		TOTALS	19	6	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...DIATOMACEAE				
	....DIATOMA		19	6	
	...FRAGILARIACEAE				
L	....SYNEDRA			0	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		94	31	
	...NITZSCHIACEAE				
L	....HANTZSCHIA			0	
D	....NITZSCHIA		150	50	
	...SURIRELLACEAE				
L	....SURIRELLA			0	
		TOTALS	260	87	1.264=DIVERSITY
	PYRRHOPHYTA	FIRE ALGAE			
	.DINOPHYCEAE	DINOFLAGELLATES			
	..PERIDINIALES				
	...GLENODINIACEAE				
	....GLENODINIUM		19	6	
		TOTALS	19	6	0.000=DIVERSITY

PHYL/DIV 0.669
CLASS 0.669
ORDER 0.669
FAMILY 1.774
GENERA 1.774

APR. 29, 1976
1500 HOURS
4,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		580	14	
	...CYMBELLACEAE				
	....CYMBELLA		580	14	
	...NAVICULACEAE	NAVICULOID			
	....GYROSIGMA		580	14	
	...NITZSCHIACEAE				
D	....NITZSCHIA		1,200	29	
	...SURIRELLACEAE				
D	....SURIRELLA		1,200	29	
		TOTALS	4,000	100	2.236=DIVERSITY

FAMILY 2.236
GENERA 2.236

MAY 18, 1976
0915 HOURS
320 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
D	....KIRCHNERIELLA		110	35	
		TOTALS	110	35	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
D	....ACHNANTHES		76	24	
D	....COCCONEIS		57	18	
	...FRAGILARIACEAE				
	....FRAGILARIA		38	12	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		38	12	
		TOTALS	210	66	1.936=DIVERSITY

PHYL/DIV 0.937
CLASS 0.937
ORDER 0.937
FAMILY 1.784
GENERA 2.190

06326500 POWDER RIVER NEAR LOCATE, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

JUNE 16, 1976
1330 HOURS

- - - NO ORGANISMS REPORTED - - -

JULY 21, 1976
0900 HOURS
1,600 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...SCENEDESMACEAE				
D	....SCENEDESMUS		1,100	71	
		TOTALS	1,100	71	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....MELOSIRA		190	12	
	..PENNALES	PENNATE			
	...EUNOTIACEAE				
	....EUNOTIA		190	12	
		TOTALS	380	24	1.000=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
	....TRACHELOMONAS		93	6	
		TOTALS	93	6	0.000=DIVERSITY

PHYL/DIV 1.086
CLASS 1.086
ORDER 1.322
FAMILY 1.322
GENERA 1.322

AUG. 18, 1976
1015 HOURS
280 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...DIATOMACEAE				
D	....DIATOMA		94	33	
	...NAVICULACEAE	NAVICULOID			
D	....GYROSIGMA		190	67	
		TOTALS	280	100	0.918=DIVERSITY

FAMILY 0.918
GENERA 0.918

SEP. 22, 1976
0915 HOURS
43,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
D	....ANKISTRODESMUS		6,500	15	
D	....OICTYOSPHAERIUM		7,700	18	
	...SCENEDESMACEAE				
	....ACTINASTRUM		6,200	14	
L	....SCENEDESMUS			0	
		TOTALS	20,000	47	1.578=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		17,000	38	
	..PENNALES	PENNATE			
	...NITZSCHIACEAE				
	....NITZSCHIA		6,200	14	
		TOTALS	23,000	52	0.843=DIVERSITY

PHYL/DIV 0.998
CLASS 0.998
ORDER 1.442
FAMILY 1.860
GENERA 2.189

06326530 YELLOWSTONE RIVER NEAR TERRY, MT

LOCATION.--Lat 46°48'17", long 105°17'36", in SE¼SW¼ sec.10, T.12 N., R.51 E., Prairie County, Hydrologic Unit 10100004, at bridge on county road, 1.2 mi (1.9 km) northeast of Terry, 11.8 mi (19.0 km) downstream from Powder River, and at mile 134.8 (216.9 km).

DRAINAGE AREA.--63,447 mi² (164,328 km²).

PERIOD OF RECORD.--Water years 1974 to current year.

REMARKS.--The water discharge is measured or computed by adding the discharge of Yellowstone River at Miles City (station 06309000) to that of Powder River near Locate (station 06326500). Some regulation by reservoirs on tributary streams and diversions for irrigation.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)
OCT										
23...	0945	9770	695	8.2	6.0	6.5	230	12.0	104	2.1
NOV										
20...	1500	10600	715	8.5	-1.0	2.0	10	12.7	100	.5
DEC										
18...	1415	6700	910	8.3	2.0	.0	30	13.8	103	.5
JAN										
30...	1630	9730	750	8.1	3.0	.0	10	12.8	96	2.5
FEB										
25...	1615	10800	765	8.6	14.5	.0	80	11.8	88	.8
MAR										
18...	0845	10600	855	8.1	7.0	1.5	100	11.6	90	1.3
APR										
30...	1100	15700	720	8.3	14.0	10.5	140	11.6	113	--
MAY										
19...	1530	32500	390	8.3	24.5	18.0	200	8.6	98	1.8
JUN										
17...	0930	42100	410	8.1	16.5	14.0	600	9.2	97	.2
JUL										
22...	1600	20500	320	8.2	31.0	24.0	40	8.2	106	.4
AUG										
19...	1115	9590	540	8.4	27.0	22.0	45	8.4	103	1.7
SEP										
23...	0930	9150	555	8.4	10.0	15.0	10	8.9	96	2.8

DATE	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)
OCT										
23...	220	64	55	21	70	2.0	3.7	195	0	160
NOV										
20...	250	89	63	22	62	1.7	3.4	185	4	158
DEC										
18...	300	110	75	27	75	1.9	3.8	235	0	193
JAN										
30...	250	79	61	23	68	1.9	3.6	205	0	168
FEB										
25...	250	91	60	24	63	1.7	3.6	192	0	157
MAR										
18...	280	110	66	27	83	2.2	4.4	208	0	171
APR										
30...	250	81	59	24	67	1.9	3.7	201	0	165
MAY										
19...	140	27	36	13	29	1.1	2.4	142	0	116
JUN										
17...	130	25	32	11	38	1.5	2.3	122	0	100
JUL										
22...	120	23	30	10	25	1.0	2.3	113	0	93
AUG										
19...	190	58	47	17	44	1.4	3.2	158	0	130
SEP										
23...	200	55	47	19	46	1.4	3.2	172	0	141

06326530 YELLOWSTONE RIVER NEAR TERRY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)
OCT									
23...	190	13	.4	9.2	459	.62	12100	.22	.04
NOV									
20...	200	12	.4	8.8	467	.64	13400	.19	.00
DEC									
18...	240	15	.4	12	564	.77	10200	.43	.04
JAN									
30...	210	13	.5	9.5	490	.67	12900	.48	.08
FEB									
25...	220	11	.5	9.3	486	.66	14200	.41	.17
MAR									
18...	260	19	.4	8.8	571	.78	16300	.38	.03
APR									
30...	220	11	.4	9.2	494	.67	20900	.30	.01
MAY									
19...	95	5.7	.2	12	263	.36	23100	.24	.04
JUN									
17...	96	6.6	.3	11	257	.35	29200	.26	.01
JUL									
22...	74	4.9	.3	9.9	212	.29	11700	.06	.00
AUG									
19...	130	8.1	.4	9.3	337	.46	8730	.00	.00
SEP									
23...	150	7.9	.4	8.7	367	.50	9070	.09	.00

DATE	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	DIS-SOL-VED ORGANIC CARBON (C) (MG/L)	SUS-PENDED ORGANIC CARBON (C) (MG/L)
OCT									
23...	.04	.08	.30	.28	160	0	8.3	5.0	.1
NOV									
20...	.31	.31	.50	.00	150	20	--	--	--
DEC									
18...	.67	.71	1.1	.06	150	20	--	--	--
JAN									
30...	.39	.47	.95	.04	90	10	5.6	--	--
FEB									
25...	.44	.61	1.0	.15	140	30	6.4	3.7	2.3
MAR									
18...	1.3	1.3	1.7	.24	170	10	--	--	--
APR									
30...	.95	.96	1.3	.21	50	20	--	6.3	1.8
MAY									
19...	1.6	1.6	1.8	.39	60	30	--	--	--
JUN									
17...	1.2	1.2	1.5	.75	80	20	--	--	--
JUL									
22...	.52	.52	.58	.09	90	20	--	2.8	1.3
AUG									
19...	.57	.57	.57	.09	120	20	--	--	--
SEP									
23...	.60	.60	.69	.03	140	30	--	--	--

06326530 YELLOWSTONE RIVER NEAR TERRY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	DISSOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)
OCT											
23...	0945	34000	10	10	7	10	10	10	2	560	10
JAN											
30...	1630	470	10	4	4	10	0	<10	1	0	0
APR											
30...	1100	5400	0	7	6	10	0	<10	2	10	0
JUL											
22...	1600	3400	20	7	3	0	0	<10	0	10	0

DATE	TOTAL COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	DISSOLVED LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)
OCT										
23...	30	3	10000	<100	3	40	40	180	10	.1
JAN										
30...	10	2	480	<100	1	40	40	20	0	.5
APR										
30...	30	3	7800	<100	13	50	40	200	10	.0
JUL										
22...	30	2	4100	<100	0	30	30	100	0	.0

DATE	DISSOLVED MERCURY (HG) (UG/L)	TOTAL MOLYBDENUM (MO) (UG/L)	DISSOLVED MOLYBDENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DISSOLVED NICKEL (NI) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	DISSOLVED VANADIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT										
23...	.1	0	2	<50	7	2	1	1.9	60	10
JAN										
30...	.2	2	2	<50	2	2	2	1.5	20	0
APR										
30...	.2	1	1	<50	10	1	1	1.0	40	0
JUL										
22...	.0	0	0	<50	2	1	1	2.4	10	0

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .062 MM
OCT						
23...	0945	6.5	9770	537	14200	--
NOV						
20...	1500	2.0	10600	24	687	--
DEC						
18...	1415	.0	6700	132	2390	--
JAN						
30...	1630	.0	9730	33	867	--
FEB						
25...	1615	.0	10800	351	10200	--
MAR						
18...	0845	1.5	10600	421	12000	--
APR						
30...	1100	10.5	15700	528	22400	--
MAY						
19...	1530	18.0	32500	867	76100	--
JUN						
17...	0930	14.0	42100	1800	205000	--
JUL						
22...	1600	24.0	20500	209	11600	69
AUG						
19...	1115	22.0	9590	117	3030	87
SEP						
23...	0930	15.0	9150	35	865	79

06326850 O'FALLON CREEK AT MILDRED, MT

LOCATION.--Lat 46°40'20", long 104° 58'05", in SE¼SE¼ sec.30, T.11 N., R.54 E., Prairie County, Hydrologic Unit 10100005, on left bank 1,000 ft (300 m) downstream from county bridge, 0.5 mi (0.8 km) southwest of Mildred and 5 mi (8 km) downstream from Pine Creek.
DRAINAGE AREA.--1,396 mi² (3,616 km²).
PERIOD OF RECORD.--September 1975 to current year.
GAGE.--Water-stage recorder. Altitude of gage is 2,340 ft (713 m), from topographic map.
REMARKS.--Records fair except those for winter period, which are poor.
EXTREMES.--September 1975: Maximum daily discharge, 0.10 ft³/s (0.003 m³/s) Sept. 1; no flow Sept. 12 to Sept. 30.
EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 150 ft³/s (4.25 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 16	--	a 400	11.3	unknown		July 3	2200	b *1,760	49.8	*7.30	2.225
June 18	0400	178	5.04	2.91	0.887	July 9	2400	285	8.07	3.40	1.036

No flow Oct. 1-12.

a - about; ice effect
b - from rating curve extended above 55.5 ft³/s (1.57 m³/s) on basis of slope area measurement of peak flow.

Discharge, in cubic feet per second, September 1975

Day	Sept.	Day	Sept.	Day	Sept.	Day	Sept.	Day	Sept.
1	.10	8	.03	15	0	22	0	29	0
2	.09	9	.02	16	0	23	0	30	0
3	.08	10	.01	17	0	24	0		
4	.07	11	.01	18	0	25	0		
5	.06	12	0	19	0	26	0		
6	.05	13	0	20	0	27	0		
7	.04	14	0	21	0	28	0		

TOTAL	0.56
MEAN	0.02
MAX	0.10
MIN	0
AC-FT	1.1

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	1.0	.60	.80	3.8	90	24	15	6.2	9.0	2.4	.90
2	0	1.0	.60	.60	3.5	80	22	14	5.4	75	2.2	.80
3	0	1.1	.60	.40	2.5	72	21	13	4.3	530	2.2	.60
4	0	1.1	1.0	.40	2.0	68	20	12	3.2	840	2.0	.70
5	0	1.0	1.6	.20	2.2	62	19	11	3.2	211	20	.70
6	0	1.1	1.8	.20	3.0	64	18	11	7.4	131	13	.50
7	0	1.1	2.0	.20	5.0	68	16	10	12	81	5.8	.35
8	0	.90	2.0	.10	10	68	15	9.5	15	55	5.3	.20
9	0	1.0	2.0	.20	20	65	14	10	27	59	8.0	.15
10	0	1.0	2.0	.20	50	62	14	9.0	15	114	5.8	.15
11	0	1.1	2.0	.20	80	60	13	9.5	10	37	5.0	.15
12	0	.90	1.9	.30	140	58	12	13	7.5	24	4.0	.10
13	.06	1.0	1.8	.40	200	58	11	14	9.0	22	3.7	.08
14	.08	1.2	1.6	.40	230	62	9.5	13	15	17	3.2	.08
15	.30	1.4	1.4	.40	290	72	9.5	17	20	14	2.8	.08
16	.40	1.4	1.2	.50	350	80	11	15	34	12	2.2	.06
17	.40	1.6	.90	.50	310	77	15	17	135	9.0	1.4	.06
18	.40	1.8	.50	.60	270	70	17	16	153	8.0	1.6	.06
19	.50	1.8	.30	.70	240	54	23	13	106	7.0	1.6	.06
20	.50	1.8	.40	.80	190	55	33	12	62	6.2	6.0	.04
21	.60	1.6	.70	1.0	160	68	34	11	46	5.8	3.0	.04
22	.70	1.8	.80	1.2	140	74	31	9.5	31	37	1.8	.06
23	.50	1.6	.60	1.3	130	65	30	9.5	25	24	1.4	.06
24	.35	1.4	.50	1.7	110	57	27	9.0	21	14	1.6	.06
25	.35	1.2	.50	2.0	110	48	22	9.0	17	9.5	2.4	.04
26	.35	1.1	.50	2.5	110	46	20	9.5	15	8.0	1.8	.04
27	.35	1.0	.50	3.0	105	39	17	8.0	12	5.8	1.6	.04
28	.35	.80	.60	3.5	100	35	16	7.0	14	4.6	1.4	.04
29	.40	.70	.80	3.8	95	33	17	6.2	14	4.0	1.2	.04
30	.70	.60	1.0	3.9	---	31	16	6.2	11	3.0	1.1	.04
31	1.2	---	1.0	4.0	---	28	---	6.2	---	2.6	1.0	---
TOTAL	8.49	36.10	33.70	36.00	3462.0	1869	567.0	345.1	856.2	2379.5	116.5	6.28
MEAN	.27	1.20	1.09	1.16	119	60.3	18.9	11.1	28.5	76.8	3.76	.21
MAX	1.2	1.8	2.0	4.0	350	90	34	17	153	840	20	.90
MIN	0	.60	.30	.10	2.0	28	9.5	6.2	3.2	2.6	1.0	.04
AC-FT	17	72	67	71	6870	3710	1120	685	1700	4720	231	12

WTR YR 1976 TOTAL 9715.87 MEAN 26.5 MAX 840 MIN 0 AC-FT 19270

06329200 BURNS CREEK NEAR SAVAGE, MT

LOCATION.--Lat 47°22'20", long 104°25'46", near center of west line of sec.26, T.19 N., R.57 E., Richland County, Hydrologic Unit 10100004, on right bank 1,000 ft (305 m) upstream from bridge on State Highway 16, 1 mi (0.8 km) upstream from mouth, and 7 mi (11 km) southwest of Savage.

DRAINAGE AREA.--233 mi^2 (603 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1957 to September 1967, September 1975 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,000 ft (610 m) from topographic map.

REMARKS.--Water-discharge records good except those for winter period, which are poor. Minor diversions for irrigation upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,100 ft^3/s (59.5 m^3/s) Mar. 20, 1960, gage height, 5.31 ft (1.619 m), from floodmarks, from rating curve extended above 200 ft^3/s (5.66 m^3/s) on basis of slope-area measurement of peak flow; no flow at times in each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 25 ft^3/s (0.71 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 10	1800	*100	2.83	*4.47	1.362	May 25	2030	62	1.76	2.98	0.908
Mar. 19	0030	96	2.72	3.21	0.978	June 7	0500	71	2.01	3.05	0.930

a - about
b - backwater from ice jam

Minimum daily discharge, 0.40 ft^3/s (0.011 m^3/s) Sept. 8-10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	2.3	1.5	1.6	2.4	15	8.0	9.0	3.4	4.0	.50	.75
2	1.9	2.3	2.0	1.2	2.3	12	7.6	8.6	2.3	2.8	.62	.75
3	1.6	2.3	2.0	1.0	2.2	9.5	7.3	7.7	1.9	5.0	.62	.62
4	1.6	2.3	2.5	.70	2.0	8.0	7.0	7.7	1.3	5.4	.75	.50
5	1.6	2.3	3.6	.80	2.3	10	6.8	7.2	1.1	4.5	4.6	.50
6	1.6	2.3	3.2	.70	6.0	12	6.6	6.8	4.3	3.4	1.9	.50
7	1.6	2.3	3.2	.60	15	15	6.5	6.8	30	2.8	1.3	.50
8	1.6	2.3	3.2	.50	35	20	6.4	6.3	12	2.3	1.9	.40
9	1.6	2.3	3.2	1.0	63	17	6.4	5.9	8.6	2.3	4.7	.40
10	1.6	2.3	3.1	1.3	90	18	6.4	5.4	7.2	2.8	3.4	.40
11	1.6	2.3	3.0	2.0	70	16	6.3	5.0	11	4.2	2.3	.50
12	1.6	1.9	2.4	2.2	58	15	6.3	7.2	17	2.3	1.6	.50
13	1.9	1.9	1.2	2.1	54	16	6.3	7.2	17	1.9	1.6	.50
14	4.5	1.9	1.9	1.8	50	14	6.3	7.2	15	1.6	1.3	.50
15	4.5	1.9	1.8	2.1	46	16	6.3	6.8	7.7	1.6	1.1	.50
16	4.0	1.9	1.4	2.2	44	18	8.6	6.3	11	1.6	.92	.62
17	2.8	1.9	1.0	1.8	42	30	11	5.9	9.6	1.6	.75	.62
18	2.8	2.3	1.6	2.3	39	50	11	5.4	8.1	1.6	.92	.92
19	2.3	2.8	2.0	2.3	35	78	11	5.4	6.8	1.6	.92	1.1
20	2.3	2.8	1.6	2.2	31	67	11	5.0	6.8	1.3	.92	1.1
21	1.9	2.3	1.8	2.4	29	54	11	4.0	8.1	1.3	.92	1.1
22	1.9	1.9	1.2	2.2	28	43	11	5.0	6.8	1.1	.75	.92
23	1.9	1.6	1.6	2.4	27	41	13	5.0	8.1	.92	.62	.92
24	2.3	1.6	1.5	2.2	26	34	23	5.0	7.7	.92	.62	.92
25	2.3	1.6	1.8	1.9	24	26	21	12	7.2	.92	4.0	.92
26	2.8	1.9	1.6	1.5	23	22	17	9.8	7.2	.75	2.3	.92
27	2.8	1.9	2.1	1.8	21	18	15	6.3	6.3	.75	1.3	.92
28	2.8	1.6	2.1	2.2	18	15	13	5.0	5.0	.62	1.1	.92
29	2.3	1.4	2.2	2.0	17	12	11	4.0	5.0	.50	.92	.75
30	2.3	1.4	2.2	2.2	---	10	11	4.0	4.5	.50	.75	.75
31	2.3	---	2.0	2.5	---	8.5	---	4.0	---	.50	.75	---
TOTAL	70.5	61.8	65.5	53.70	902.2	740.0	299.1	196.9	248.0	63.38	46.65	21.22
MEAN	2.27	2.06	2.11	1.73	31.1	23.9	9.97	6.35	8.27	2.04	1.50	.71
MAX	4.5	2.8	3.6	2.5	90	78	23	12	30	5.4	4.7	1.1
MIN	1.6	1.4	1.0	.50	2.0	8.0	6.3	4.0	1.1	.50	.50	.40
AC-FT	140	123	130	107	1790	1470	593	391	492	126	93	42

WTR YR 1976 TOTAL 2768.95 MEAN 7.57 MAX 90 MIN .40 AC-FT 5490

06329200 BURNS CREEK NEAR SAVAGE, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1975 to September 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT												
09...	1100	1.7	1750	8.5	5.0	6.0	8	9.8	84	.5	500	23
NOV												
11...	1600	2.3	1650	8.5	.5	1.5	3	11.5	89	.4	490	22
DEC												
11...	1030	3.0	1650	8.4	-15.0	.0	8	10.6	79	.9	490	14
JAN												
13...	1500	2.1	2250	8.0	-9.0	.0	5	11.6	86	.2	520	15
FEB												
09...	1530	63	640	8.3	9.0	.5	50	9.4	70	6.8	200	18
MAR												
09...	1500	17	1160	8.4	-.5	.5	55	12.6	94	6.8	350	36
APR												
13...	1630	6.3	1750	8.4	25.0	17.5	30	9.0	100	.7	580	110
MAY												
12...	1500	6.9	1770	8.4	13.5	10.5	80	9.2	89	1.0	550	61
JUN												
28...	1630	4.6	1600	8.5	24.0	23.0	50	8.6	108	.6	480	39
JUL												
26...	1500	.77	1700	8.6	35.5	30.0	40	8.0	114	1.9	440	4
AUG												
30...	1700	.78	1530	8.4	32.0	24.0	50	8.0	103	1.2	440	0
SEP												
29...	1230	.89	1580	8.4	23.5	15.5	25	9.6	105	1.6	460	9

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
OCT											
09...	63	82	200	3.9	8.3	545	15	440	6.5	.5	12
NOV											
11...	70	77	200	3.9	7.5	573	0	460	6.7	.5	12
DEC											
11...	71	77	190	3.7	8.1	586	0	430	6.9	.5	13
JAN											
13...	76	79	200	3.8	7.8	609	0	460	5.5	.5	13
FEB											
09...	31	29	55	1.7	8.2	218	0	140	3.6	.2	6.8
MAR											
09...	52	53	120	2.8	7.9	381	0	300	4.8	.3	9.3
APR											
13...	79	94	210	3.8	9.1	563	5	540	6.1	.4	7.8
MAY											
12...	68	93	230	4.3	8.3	544	27	530	5.9	.5	8.1
JUN											
28...	58	82	200	4.0	8.5	540	0	450	5.5	.4	9.4
JUL											
26...	44	79	230	4.8	9.8	491	17	460	7.3	.5	10
AUG											
30...	49	77	220	4.6	9.6	500	20	490	8.6	.6	11
SEP											
29...	52	79	220	4.5	9.5	544	0	430	6.8	.6	12

06329200 BURNS CREEK NEAR SAVAGE, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT											
09...	1100	1.50	5.05	.00	.02	.23	.25	.25	.02	370	0
NOV											
11...	1120	1.52	6.96	.01	.00	.33	.33	.34	.00	300	0
DEC											
11...	1090	1.48	8.83	.07	.01	.68	.69	.76	.00	300	20
JAN											
13...	1140	1.55	6.46	.08	.02	.38	.40	.48	.01	290	10
FEB											
09...	382	.52	65.0	.11	.08	1.4	1.5	1.6	.11	170	120
MAR											
09...	735	1.00	33.7	.15	.10	3.3	3.4	3.6	.14	200	120
APR											
13...	1230	1.67	20.9	.00	.02	.44	.46	.46	.03	330	20
MAY											
12...	1240	1.69	23.1	.04	.02	.65	.67	.71	.07	320	10
JUN											
28...	1080	1.47	13.4	.03	.03	.65	.68	.71	.05	300	10
JUL											
26...	1100	1.50	2.29	.00	.02	.61	.63	.63	.04	410	20
AUG											
30...	1130	1.54	2.38	.01	.00	.47	.47	.48	.05	420	60
SEP											
29...	1080	1.47	2.60	.01	.00	.49	.49	.50	.03	400	20

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL BERYL-LIUM (BE) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)
OCT											
09...	1100	240	0	2	1	10	10	0	0	10	10
DEC											
11...	1030	100	--	0	--	10	--	<10	--	10	--
MAR											
09...	1500	1300	--	2	--	0	--	<10	--	10	--
JUN											
28...	1630	630	--	2	--	0	--	1	--	10	--
SEP											
29...	1230	--	10	--	1	--	0	--	1	--	0

DATE	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)
OCT										
09...	0	2	300	0	1	40	40	20	20	.0
DEC										
11...	20	--	560	<100	--	40	--	40	--	.0
MAR										
09...	20	--	2500	<100	--	20	--	110	--	.0
JUN										
28...	0	--	1200	5	--	30	--	40	--	<.5
SEP										
29...	--	2	--	--	8	--	50	--	0	--

DATE	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
09...	.0	5	4	50	2	0	0	.7	10	10
DEC										
11...	--	4	--	<50	--	0	--	--	50	--
MAR										
09...	--	2	--	<50	--	0	--	--	50	--
JUN										
28...	--	3	--	4	--	0	--	--	10	--
SEP										
29...	.0	--	2	--	2	--	0	2.2	--	20

06329200 BURNS CREEK NEAR SAVAGE, MT--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
OCT					
09...	1100	6.0	1.7	73	.34
NOV					
11...	1600	1.5	2.3	54	.34
DEC					
11...	1030	.0	3.0	128	1.0
JAN					
13...	1500	.0	2.1	60	.34
FEB					
09...	1530	.5	63	124	21
MAR					
09...	1500	.5	17	132	6.1
APR					
13...	1630	17.5	6.3	102	1.7
MAY					
12...	1500	10.5	6.9	262	4.9
JUN					
28...	1630	23.0	4.6	154	1.9
JUL					
26...	1500	30.0	.77	88	.18
AUG					
30...	1700	24.0	.78	91	.19
SEP					
29...	1230	15.5	.89	113	.27

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT

LOCATION.--Lat 47°40'42", long 104°09'22", in SW¼NE¼SW¼ sec.9, T.22 N., R.59 E., Richland County, Hydrologic Unit 10100004, on left bank at Montana-Dakota Utilities Company powerplant, 0.2 mi (0.3 km) downstream from bridge on State Highway 23, 2.5 mi (4.0 km) south of Sidney, 3.0 mi (4.8 km) downstream from Fox Creek, and 30 mi (48 km) upstream from mouth.

DRAINAGE AREA.--69,103 mi² (178,977 km²). Area at site 4.5 mi (7.2 km) upstream, 68,812 mi² (178,223 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1910 to September 1931 (published as "at Intake"), October 1933 to current year. If monthly figures of diversions to Lower Yellowstone Canal at Intake are added to records at this site, records equivalent to those published as Yellowstone River at Glendive (1898-1910, 1931-34) can be obtained. Monthly discharge only for some periods, published in WSP 1309. Monthly figures of diversions into Lower Yellowstone Canal prior to 1951 published in WSP 1309, 1951-60 published in WSP 1729, 1961-65 published in WSP 1916, 1966-70 published in WSP 2116, and 1971 to current year are published in annual reports.

GAGE.--Water-stage recorder. Datum of gage is 1,881.3 ft (573.42 m) above mean sea level (levels by Corps of Engineers). Jan. 1, 1911, to Sept. 30, 1931, nonrecording gage at site 32 miles (51 km) upstream at different datum. Apr. 9, 1934, to May 16, 1945, water-stage recorder at two sites within 500 ft (150 m) of highway bridge 0.2 mi (0.3 km) upstream and May 17, 1945, to Apr. 3, 1952, nonrecording gage on same bridge at datum 1.36 ft (0.415 m) higher. Apr. 4, 1952, to Nov. 19, 1967, water-stage recorder at site 4.5 mi (7.2 km) upstream at different datum.

REMARKS.--Water-discharge records good except those for winter period, which are poor. Some regulation on tributary streams. Diversion for irrigation of about 1,250,000 acres (5,060 km²) above station. Lower Yellowstone Project Main Canal diverts from left bank in NW¼ sec.36, T.18 N., R.56 E., at Lower Yellowstone diversion dam at Intake about 36.6 mi (58.9 km) upstream for irrigation of about 52,000 acres (210 km²) of which about one-third lies above station (see table below).

AVERAGE DISCHARGE.--64 years, 13,170 ft³/s (373.0 m³/s), 9,543,000 acre-ft/yr (11.8 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 159,000 ft³/s (4,500 m³/s) June 2, 1921, gage height, 12.6 ft (3.84 m), site and datum then in use; maximum gage height observed, 21.85 ft (6.660 m) Mar. 22, 1947, site and datum then in use (backwater from ice); minimum discharge, 470 ft³/s (13.3 m³/s) May 17, 1961, gage height, 2.73 ft (0.832 m), site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 49,900 ft³/s (1,413 m³/s) June 14, gage height, 13.28 ft (4.048 m); minimum daily, 3,700 ft³/s (105 m³/s) Jan. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9130	10300	8000	10000	12000	11000	10300	14900	38800	28800	11600	6460
2	9190	10200	7200	9000	12500	10500	10300	14300	39800	28300	11200	6310
3	9190	10100	7200	7000	12000	9000	10200	14100	39300	31600	11000	6160
4	9250	9130	8000	6000	11000	8000	10300	14900	36800	33700	11400	6040
5	9190	10300	9000	5000	9000	7000	10300	16600	35200	35900	14500	6040
6	9130	10600	10500	4500	7500	6600	10600	17700	37400	32900	16600	6010
7	9010	10500	12000	4200	6500	7000	10600	19500	41840	30800	14500	5920
8	8890	10100	11000	4200	6000	9000	10300	21100	44300	28800	12800	5890
9	9010	9250	10500	4000	6000	10000	8200	22100	44900	28600	12400	5950
10	9310	9250	10500	3700	7000	11500	7570	21900	46000	29600	11800	6340
11	9130	10100	11000	4000	9000	11500	9070	21200	44800	29400	11200	6700
12	9310	10600	11000	5000	11000	11000	10400	22100	45700	26900	10400	6970
13	9430	10600	10000	6000	13000	10500	11800	23600	46400	26200	9930	7150
14	9720	10300	9000	7000	14500	10000	12100	25100	48600	25500	9430	7210
15	9660	10200	8500	10000	14500	10000	12400	27000	47500	24200	8980	7360
16	9720	10200	7500	11000	14000	10500	12600	25800	45500	23400	8650	7570
17	9900	10400	7000	12000	13500	11000	13500	27100	45400	22100	8440	7840
18	9950	10400	6500	12000	13000	11000	13600	31600	40000	20600	8170	7960
19	9950	9950	7000	13000	12500	11500	13400	31400	36800	18600	7870	7840
20	9840	10100	7500	14000	11500	12000	13800	29500	38000	17300	7570	7720
21	9780	10400	8000	15000	11000	12500	13400	31000	37100	16700	7300	7660
22	9840	10600	6500	14000	10500	13000	12800	35400	34800	17600	7000	7870
23	9950	9800	9000	13000	10500	14000	12300	37000	35200	17700	6700	8140
24	10800	9600	10000	12000	10500	14000	12500	37200	40000	16500	6700	8290
25	10900	9200	11000	11000	10500	14000	12100	38600	43300	15700	6850	8410
26	11300	9000	11500	11000	10500	11000	12000	39200	43700	15000	6550	8440
27	11200	8600	12000	11000	11000	10800	11800	37700	40300	13700	6370	8230
28	11000	8400	13000	10800	11000	10700	11900	37100	36100	13100	6310	8500
29	10300	8200	12500	10500	11000	10700	12700	36100	33200	12600	6400	9220
30	10100	7600	12000	11000	---	10500	14200	34400	30800	12200	6460	9310
31	10300	---	11000	11500	---	10500	---	35600	---	11900	6430	---
TOTAL	303380	293980	297400	282500	312500	330300	347040	840800	1217500	705900	291510	219510
MEAN	9786	9799	9594	9113	10780	10650	11570	27120	40580	22770	9404	7317
MAX	11300	10600	13000	15000	14500	14000	14200	39200	48600	35900	16600	9310
MIN	8890	7600	6500	3700	6000	6600	7570	14100	30800	11900	6310	5890
AC-FT	601800	583100	589900	560300	619800	655100	688400	1668000	2415000	1400000	578200	435400
(†)	0	0	0	0	0	0	0	62010	74960	83440	82730	71970

CAL YR 1975 TOTAL 6612370 MEAN 18120 MAX 76300 MIN 3000 AC-FT 13120000 (†) 287600
WTR YR 1976 TOTAL 5442220 MEAN 14870 MAX 48600 MIN 3700 AC-FT 10790000 (†) 375100

† Diversions, in acre-feet, by Lower Yellowstone Canal, furnished by Bureau of Reclamation.

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued
(National Stream Quality Accounting Network)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1948 to current year.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1951 to current year.
WATER TEMPERATURES: January 1951 to current year.
SUSPENDED SEDIMENT DISCHARGE: July 1972 to current year.
INSTRUMENTATION.--Temperature recorder April to November 1974, May to September 1975.
REMARKS.--Prior to July 1972, sediment sampling and record computation under supervision of Corps of Engineers, U.S. Army. Flow affected by ice during most of winter months. Many reservoirs and diversions for irrigation upstream from station.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,780 micromhos Jan. 14, 1951; minimum daily, 193 micromhos Aug. 15, 1964.
WATER TEMPERATURES: Maximum daily, 29.0°C July 23, 1960; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily, 26,800 mg/L May 8, 1975; minimum daily, 8 mg/L Jan. 9, 1973.
SEDIMENT LOADS: Maximum daily, 3,030,000 tons (2,750,000 tonnes) May 8, 1975; minimum daily, 130 tons (118 tonnes) Jan. 9, 1975.
EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 949 micromhos May 3; minimum daily, 303 micromhos July 7, 14.
WATER TEMPERATURES: Maximum daily, 24.0°C July 10, 25; minimum daily, 0.0°C on many days during November to March.
SEDIMENT CONCENTRATIONS: Maximum daily, 2,930 mg/L June 8; minimum daily, 15 mg/L Jan. 11.
SEDIMENT LOADS: Maximum daily, 350,000 tons (318,000 tonnes) June 8; minimum daily, 162 tons (147 tonnes) Jan. 11.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	CHEMICAL OXYGEN DEMAND (HIGH LEVEL) (MG/L)	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)
OCT											
08...	1500	9010	720	8.7	5.0	11.5	4	9.6	95	9	--
28...	1600	11100	750	8.5	7.0	5.5	50	11.3	96	13	1.3
NOV											
12...	1230	10600	700	8.4	4.5	3.0	15	11.5	93	8	--
25...	1500	8600	700	8.7	-14.0	.5	4	11.8	88	4	.8
DEC											
11...	1430	11500	735	8.4	-18.0	1.5	8	10.6	82	9	--
30...	1430	12600	760	8.6	7.0	.5	9	10.4	78	38	.1
JAN											
14...	1200	6500	930	8.2	-15.0	.0	8	11.6	86	6	--
28...	1200	10800	755	8.3	3.0	.5	7	11.0	82	6	1.4
FEB											
10...	1100	8800	850	8.1	-4.0	.5	15	11.4	85	13	--
25...	1400	11000	780	8.3	12.0	.5	45	11.1	83	18	.1
MAR											
10...	0930	9600	940	8.2	.0	1.0	35	11.4	86	14	--
25...	1330	13200	850	8.5	4.5	3.0	190	8.9	72	37	2.1
APR											
14...	1300	12100	835	8.6	7.0	13.5	40	9.1	94	9	--
27...	1400	12100	850	9.0	10.0	11.0	90	8.3	81	21	--
MAY											
13...	1100	23600	622	8.4	12.0	13.0	110	9.2	94	34	--
27...	1500	37600	370	8.0	20.5	17.0	250	8.5	94	--	.4
JUN											
09...	1430	44400	380	8.2	26.5	22.0	--	7.6	93	--	--
29...	1400	33300	425	8.2	23.0	17.0	400	8.2	91	--	.3
JUL											
14...	1000	25500	330	8.2	26.0	22.5	95	7.2	81	--	--
27...	1200	13800	400	8.3	23.5	23.5	35	6.8	86	15	1.4
AUG											
10...	1400	11900	540	8.0	25.0	22.5	190	7.0	86	--	--
31...	1200	6440	575	8.2	17.5	20.0	10	7.9	93	--	--
SEP											
13...	1430	7150	640	8.1	19.5	18.0	8	8.4	94	--	--
30...	1230	9300	610	8.3	22.0	15.0	7	10.0	106	--	2.0

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	FECAL STREPTOCOCCI KF AGAR (COL. PER 100 ML)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
OCT											
08...	28	27	30	--	--	--	--	--	--	--	--
28...	--	96	66	230	73	57	22	66	1.9	3.9	195
NOV											
12...	22	8	14	--	--	--	--	--	--	--	--
25...	20	15	<1	240	72	59	22	63	1.8	3.5	198
DEC											
11...	6	2	2	--	--	--	--	--	--	--	--
30...	12	18	12	270	82	69	24	68	1.8	3.4	220
JAN											
14...	28	4	14	--	--	--	--	--	--	--	--
28...	22	6	9	240	80	60	22	62	1.7	3.6	196
FEB											
10...	22	4	160	--	--	--	--	--	--	--	--
25...	15	<1	25	240	85	58	23	72	2.0	3.6	189
MAR											
10...	28	8	43	--	--	--	--	--	--	--	--
25...	330	7	80	260	96	63	26	80	2.1	3.9	201
APR											
14...	8	4	10	--	--	--	--	--	--	--	--
27...	16	12	12	280	100	66	27	80	2.1	3.9	208
MAY											
13...	210	120	--	--	--	--	--	--	--	--	--
27...	1700	340	240	140	38	36	11	25	.9	2.1	118
JUN											
09...	--	510	460	--	--	--	--	--	--	--	--
29...	540	280	360	150	55	38	13	31	1.1	2.3	114
JUL											
14...	73	68	87	--	--	--	--	--	--	--	--
27...	80	24	33	130	31	34	12	32	1.2	2.6	126
AUG											
10...	190	140	190	--	--	--	--	--	--	--	--
31...	37	8	40	200	52	49	18	51	1.6	3.5	176
SEP											
13...	20	6	42	--	--	--	--	--	--	--	--
30...	84	93	64	210	50	48	21	49	1.5	3.7	191

DATE	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	SUSPENDED SOLIDS (MG/L)
OCT											
08...	--	149	--	--	--	--	454	--	.62	11000	60
28...	0	160	190	13	.4	9.2	476	458	.65	14300	160
NOV											
12...	--	144	--	--	--	--	456	--	.62	13100	29
25...	2	166	200	10	.4	9.5	468	467	.64	10900	2
DEC											
11...	--	150	--	--	--	--	466	--	.63	14500	15
30...	5	189	210	11	.4	10	506	509	.69	17200	26
JAN											
14...	--	200	--	--	--	--	650	--	.88	11400	21
28...	0	161	190	11	.4	10	476	456	.65	13900	10
FEB											
10...	--	168	--	--	--	--	524	--	.71	12500	24
25...	0	155	220	14	.4	9.1	523	493	.71	15500	144
MAR											
10...	--	185	--	--	--	--	642	--	.87	16600	70
25...	2	168	230	18	.4	8.7	574	531	.78	20500	823
APR											
14...	--	162	--	--	--	--	548	--	.75	17900	128
27...	3	176	240	17	.4	9.5	575	550	.78	18800	250
MAY											
13...	--	153	--	--	--	--	398	--	.54	25400	450
27...	0	97	83	6.2	.1	12	227	234	.31	23000	675
JUN											
09...	--	83	--	--	--	--	--	--	--	--	7
29...	0	94	140	5.6	.2	11	274	297	.37	24600	122
JUL											
14...	--	77	--	--	--	--	208	--	.28	14300	254
27...	0	103	97	6.1	.4	9.3	251	256	.34	9350	67
AUG											
10...	--	109	--	--	--	--	347	--	.47	11100	399
31...	0	144	140	8.4	.4	8.3	358	366	.49	6230	27
SEP											
13...	--	120	--	--	--	--	407	--	.55	7860	30
30...	0	157	130	6.6	.4	8.0	352	361	.48	8840	29

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJEL-DAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	DIS-SOLVED ORGANIC CARBON (C) (MG/L)	SUS-PENDED ORGANIC CARBON (C) (MG/L)
OCT											
08...	.02	.02	.55	.57	.59	.03	--	--	4.7	--	--
28...	.21	.07	1.0	1.1	1.3	.10	150	40	4.6	--	--
NOV											
12...	.08	.04	.34	.38	.46	.04	--	--	2.3	--	--
25...	.19	.03	.68	.71	.90	.01	150	0	3.9	--	--
DEC											
11...	.59	.02	.49	.51	1.1	.02	--	--	11	--	--
30...	.41	.02	.24	.26	.67	.02	140	20	--	9.2	.2
JAN											
14...	.47	.08	.34	.42	.89	.06	--	--	3.9	--	--
28...	.51	.06	.50	.56	1.1	.01	120	30	2.0	--	--
FEB											
10...	.41	.09	.89	.98	1.4	.06	--	--	6.7	--	--
25...	.39	.04	.47	.51	.90	.10	140	30	12	--	--
MAR											
10...	.49	.08	.53	.61	1.1	.09	--	--	4.9	--	--
25...	.41	.00	1.8	1.8	2.2	.70	100	0	11	--	.5
APR											
14...	.01	.00	.63	.63	.64	.28	--	--	5.6	--	--
27...	.30	.00	.76	.76	1.1	.16	150	30	4.6	--	--
MAY											
13...	.47	.03	1.3	1.3	1.8	.33	--	--	10	--	--
27...	.19	.01	1.2	1.2	1.4	.34	60	50	9.9	--	--
JUN											
09...	.19	.01	1.6	1.6	1.8	.73	--	--	12	--	--
29...	.20	.02	.68	.70	.90	.42	70	30	--	5.8	7.8
JUL											
14...	.09	.08	.40	.48	.57	.23	--	--	7.2	--	--
27...	.00	.00	.62	.62	.62	.12	100	20	10	--	--
AUG											
10...	.34	.00	.68	.68	1.0	.23	--	--	15	--	--
31...	.00	.00	.24	.24	.24	.06	150	10	7.8	--	--
SEP											
13...	.03	.00	.23	.23	.26	.03	--	--	24	--	--
30...	.00	.00	.49	.49	.49	.04	140	10	--	4.2	--

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	DIS-SOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	DIS-SOLVED BERYLLIUM (BE) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DIS-SOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DIS-SOLVED CHROMIUM (CR) (UG/L)
DEC											
30...	1430	450	--	4	--	10	--	<10	--	30	--
MAR											
25...	1330	13000	10	17	2	10	0	<10	1	40	0
JUN											
29...	1400	11000	--	18	--	0	--	0	--	20	--
SEP											
30...	1230	400	10	6	6	--	0	<10	0	0	0

DATE	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)
DEC										
30...	20	--	670	<100	--	30	--	20	--	.0
MAR										
25...	40	2	24000	<100	3	60	40	600	10	.0
JUN										
29...	50	--	21000	31	--	20	--	410	--	<.5
SEP										
30...	<10	1	630	<100	2	40	40	30	0	.0

DATE	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYBDENUM (MO) (UG/L)	DIS-SOLVED MOLYBDENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	DIS-SOLVED SELENIUM (SE) (UG/L)	DIS-SOLVED VANADIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
DEC										
30...	--	--	--	<50	--	2	--	--	40	--
MAR										
25...	.0	2	2	<50	2	2	2	.8	90	10
JUN										
29...	--	2	--	49	--	0	--	--	90	--
SEP										
30...	.0	2	0	<50	3	1	1	2.3	30	0

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TOTAL ATRA-ZINE (UG/L)	TOTAL ALDRIN (UG/L)	TOTAL CHLOR-DANE (UG/L)	TOTAL DDD (UG/L)	TOTAL DDE (UG/L)	TOTAL DDT (UG/L)	TOTAL DI-AZINON (UG/L)	TOTAL DI-ELDRIN (UG/L)	TOTAL ENDRIN (UG/L)	TOTAL ETHION (UG/L)	TOTAL HEPTA-CHLOR (UG/L)
DEC 30...	1430	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MAR 25...	1330	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
JUN 29...	1400	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG 10...	1400	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	TOTAL HEPTA-CHLOR EPOXIDE (UG/L)	TOTAL LINDANE (UG/L)	TOTAL MALA-THION (UG/L)	TOTAL METH-OXY-CHLOR (UG/L)	TOTAL METHYL PARA-THION (UG/L)	TOTAL METHYL TRI-THION (UG/L)	TOTAL PARA-THION (UG/L)	TOTAL TOX-APHENE (UG/L)	TOTAL TRI-THION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)
DEC 30...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MAR 25...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
JUN 29...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG 10...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	684	699	758	722	764	760	891	831	400	410	420	582
2	681	701	767	719	748	769	894	852	363	417	428	579
3	687	705	772	731	731	791	893	949	362	418	438	585
4	689	709	776	738	718	810	893	939	360	413	446	584
5	689	710	784	758	707	831	893	902	381	408	442	590
6	702	674	799	772	704	858	889	852	389	318	440	597
7	691	706	810	790	708	889	882	802	400	303	458	602
8	689	713	791	817	727	911	878	758	429	321	443	609
9	691	715	741	839	749	931	872	698	372	335	443	610
10	702	720	721	858	767	919	891	661	359	319	525	612
11	715	710	712	877	797	903	903	641	361	388	528	610
12	731	685	727	895	816	885	849	649	358	366	519	607
13	737	710	710	902	800	865	838	639	340	330	528	607
14	725	729	718	930	772	840	828	610	327	335	529	612
15	739	736	737	940	740	818	809	582	355	328	521	609
16	750	715	752	908	719	829	787	542	391	330	518	599
17	750	719	770	874	676	840	782	532	389	333	525	600
18	750	700	808	841	660	840	771	545	394	338	529	599
19	745	701	808	803	662	812	786	519	469	367	532	600
20	739	704	798	770	668	801	800	484	477	380	535	592
21	742	715	771	740	682	860	775	472	469	371	538	584
22	739	694	---	722	702	881	801	463	491	392	541	581
23	735	702	829	709	727	872	858	406	477	378	549	585
24	739	698	843	695	754	861	860	384	432	370	557	592
25	760	684	830	699	768	840	851	375	382	386	559	584
26	776	707	835	709	765	868	832	378	368	386	559	571
27	770	724	818	708	759	870	839	378	409	400	565	570
28	773	734	798	713	760	880	848	372	428	407	569	574
29	758	748	779	724	770	887	829	380	430	399	569	569
30	762	741	772	739	---	889	800	382	410	402	568	560
31	770	---	768	748	---	885	---	391	---	410	577	---
MONTH	729	710	777	787	735	855	844	593	399	370	513	592
YEAR	MAX	949	MIN	303	MEAN	658						

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.5	5.0	0.0	0.0	1.0	1.0	9.0	9.0	18.5	19.0	22.0	20.0
2	12.5	7.0	0.0	0.0	1.0	1.0	9.0	9.0	20.0	20.0	22.0	20.0
3	13.5	7.0	0.0	0.0	0.5	0.0	5.0	9.0	20.0	19.5	22.0	18.0
4	14.0	8.0	0.0	0.0	0.0	0.0	7.0	11.0	20.0	20.0	22.0	19.0
5	13.0	8.0	0.0	0.0	0.0	0.0	8.0	11.0	20.0	22.0	22.0	19.5
6	13.0	8.0	0.0	0.0	0.0	0.0	9.0	12.0	21.0	23.0	20.0	20.0
7	14.0	7.5	0.0	0.0	0.0	0.5	9.0	12.0	21.0	23.0	21.0	19.0
8	12.5	7.0	0.0	0.0	0.0	1.0	10.0	14.0	21.0	23.0	21.5	17.0
9	10.0	5.5	0.0	0.0	1.0	1.5	12.0	16.0	21.0	23.5	22.0	16.0
10	8.5	4.0	0.0	0.0	1.0	1.5	12.0	16.0	21.5	24.0	21.0	15.0
11	8.0	3.5	0.0	0.0	1.0	1.5	11.0	17.0	22.0	23.0	21.0	16.5
12	8.5	2.5	0.0	0.0	1.0	1.0	12.0	15.0	20.0	23.0	22.0	18.0
13	9.0	1.5	0.0	0.0	1.0	1.0	14.0	15.0	19.0	23.0	22.0	16.0
14	7.5	2.0	0.0	0.0	1.0	1.0	14.0	15.0	18.0	23.0	22.0	16.0
15	7.0	3.0	0.0	0.0	1.0	1.0	15.0	15.0	15.0	22.0	21.5	17.0
16	8.0	3.5	0.0	0.0	1.0	1.0	13.0	16.0	15.5	20.5	22.0	17.0
17	8.0	4.5	0.0	0.0	1.0	1.5	9.0	16.0	15.0	21.5	23.0	19.0
18	9.0	4.5	0.0	0.0	1.0	1.5	8.0	17.0	13.5	23.0	22.0	20.0
19	9.0	4.0	0.0	0.0	1.0	1.5	9.0	17.5	15.0	22.5	22.0	19.0
20	9.5	2.5	0.0	0.5	1.0	1.5	9.0	17.5	17.5	23.0	22.0	16.0
21	10.0	1.5	0.0	0.5	1.0	1.5	10.0	17.5	18.0	23.0	22.0	16.0
22	10.0	1.0	---	0.5	1.0	1.5	10.0	17.5	18.0	23.0	22.0	16.0
23	8.0	0.0	0.0	0.5	1.0	1.5	10.0	18.0	19.0	23.0	22.0	15.0
24	7.0	0.0	0.0	0.5	1.0	1.5	9.0	18.0	17.0	23.5	22.0	15.0
25	6.0	0.0	0.5	0.0	1.0	2.0	9.0	17.5	16.5	24.0	21.0	15.0
26	7.0	0.0	0.5	0.0	1.5	3.5	9.0	16.0	15.0	23.0	21.0	15.0
27	6.0	0.0	0.5	0.0	1.5	5.0	9.5	14.0	15.0	23.0	19.0	13.0
28	5.0	0.0	0.5	0.5	1.5	7.5	9.0	17.0	16.0	21.0	19.0	12.0
29	5.0	0.0	0.5	1.0	1.0	7.5	8.5	17.0	16.5	21.5	18.5	13.0
30	5.0	0.0	0.5	0.5	---	8.0	8.5	17.0	18.0	21.0	19.0	15.0
31	5.5	---	0.5	0.5	---	8.0	---	18.0	---	21.0	19.0	---
MONTH	9.0	3.5	0.0	0.0	1.0	2.0	10.0	15.0	18.0	22.0	21.5	17.0
YEAR	MAX	24.0	MIN	0.0	MEAN	10.0						

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM
OCT							
28...	1600	5.5	11100	151	4530	78	--
NOV							
12...	1230	3.0	10600	72	2060	42	--
JAN							
14...	1200	.0	6500	51	895	57	--
28...	1200	.5	10800	27	787	49	--
FEB							
10...	1100	.5	8800	178	4230	25	--
MAR							
25...	1330	3.0	13200	2000	71300	78	--
APR							
14...	1300	13.5	12100	362	11800	39	--
27...	1400	11.0	12100	509	16600	48	--
MAY							
13...	1100	13.0	23600	1110	70700	60	--
27...	1500	17.0	37600	1070	109000	--	34
JUN							
09...	1430	22.0	44400	2450	294000	--	28
29...	1400	17.0	33300	1060	95300	--	55
JUL							
14...	1000	22.5	25500	302	20800	--	47
27...	1200	23.5	13800	307	11400	38	--
AUG							
10...	1400	22.5	11900	412	13200	--	62
31...	1200	20.0	6440	49	852	74	--
SEP							
13...	1430	18.0	7150	45	869	69	--

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
OCT						
28...	--	--	--	--	--	--
NOV						
12...	--	--	--	--	--	--
JAN						
14...	--	--	--	--	--	--
28...	--	--	--	--	--	--
FEB						
10...	--	--	--	--	--	--
MAR						
25...	--	--	--	--	--	--
APR						
14...	--	--	--	--	--	--
27...	--	--	--	--	--	--
MAY						
13...	--	--	--	--	--	--
27...	49	76	88	99	99	100
JUN						
09...	40	92	97	100	--	--
29...	80	93	99	100	--	--
JUL						
14...	69	86	97	100	--	--
27...	--	--	--	--	--	--
AUG						
10...	81	91	97	100	--	--
31...	--	--	--	--	--	--
SEP						
13...	--	--	--	--	--	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	BED MAT. FALL DIAM. % FINER THAN .004 MM	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM
NOV							
12...	1230	3.0	--	0	13	99	100
FEB							
10...	1100	.5	--	0	0	2	4
MAY							
27...	1500	17.0	7	51	81	95	97
JUN							
29...	1400	17.0	--	0	1	3	4
JUL							
27...	1200	23.5	--	0	11	96	100
SEP							
30...	1230	15.0	--	1	14	97	100

DATE	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
NOV							
12...	--	--	--	--	--	--	--
FEB							
10...	7	7	8	9	18	51	100
MAY							
27...	97	97	98	99	--	--	--
JUN							
29...	4	4	5	6	21	33	100
JUL							
27...	--	--	--	--	--	--	--
SEP							
30...	--	--	--	--	--	--	--

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	9130	56	1380	10300	129	3590	8000	139	3000
2	9190	54	1340	10200	116	3190	7200	148	2880
3	9190	49	1220	10100	109	2970	7200	160	3110
4	9250	44	1100	9130	87	2140	8000	159	3430
5	9190	41	1020	10300	133	3700	9000	144	3500
6	9130	45	1110	10600	149	4260	10500	124	3520
7	9010	51	1240	10500	119	3370	12000	103	3340
8	8890	50	1200	10100	99	2700	11000	101	3000
9	9010	45	1090	9250	96	2400	10500	110	3120
10	9310	43	1080	9250	99	2470	10500	127	3600
11	9130	109	2690	10100	105	2860	11000	143	4250
12	9310	118	2970	10600	78	2230	11000	156	4630
13	9430	141	3590	10600	92	2630	10000	161	4350
14	9720	178	4670	10300	100	2780	9000	150	3650
15	9660	224	5840	10200	56	1540	8500	129	2960
16	9720	277	7270	10200	42	1160	7500	111	2250
17	9900	246	6580	10400	64	1800	7000	101	1910
18	9950	110	2960	10400	78	2190	6500	108	1900
19	9950	50	1340	9950	74	1990	7000	122	2310
20	9840	64	1700	10100	72	1960	7500	115	2330
21	9780	91	2400	10400	86	2410	8000	99	2140
22	9840	94	2500	10600	78	2230	8500	78	1790
23	9950	79	2120	9800	29	767	9000	55	1340
24	10800	151	4400	9600	23	596	10000	36	972
25	10900	407	12000	9200	76	1890	11000	29	861
26	11300	433	13200	9000	130	3160	11500	33	1020
27	11200	317	9590	8600	159	3690	12000	42	1360
28	11000	238	7070	8400	159	3610	13000	54	1900
29	10300	165	4590	8200	147	3250	12500	73	2460
30	10100	146	3980	7600	137	2810	12000	226	7320
31	10300	151	4200	---	---	---	11000	288	8550
TOTAL	303380	---	117440	293980	---	76343	297400	---	92753
		JANUARY			FEBRUARY			MARCH	
1	10000	210	5670	12000	80	2590	11000	214	6360
2	9000	154	3740	12500	106	3680	10500	203	5760
3	7000	125	2360	12000	122	3950	9000	182	4420
4	6000	107	1730	11000	121	3590	8000	144	3110
5	5000	89	1200	9000	110	2670	7000	110	2080
6	4500	71	863	7500	94	1900	6600	99	1760
7	4300	55	639	6500	75	1320	7000	105	1980
8	4200	40	454	6000	53	859	9000	120	2920
9	4000	28	302	6000	39	632	10000	138	3730
10	3700	19	190	7000	175	3310	11500	158	4910
11	4000	15	162	9000	285	6930	11500	182	5650
12	5000	17	229	11000	334	9920	11000	207	6150
13	6000	29	470	13000	372	13100	10500	233	6610
14	7000	51	964	14500	406	15900	10000	265	7150
15	10000	67	1810	14500	442	17300	10000	300	8100
16	11000	74	2200	14000	507	19200	10500	343	9720
17	12000	76	2460	13500	493	18000	11000	393	11700
18	12000	75	2430	13000	432	15200	11000	458	13600
19	13000	74	2600	12500	354	11900	11500	610	18900
20	14000	71	2680	11500	287	8910	12000	1010	32700
21	15000	68	2750	11000	235	6980	12500	1000	33800
22	14000	64	2420	10500	189	5360	13000	1070	37600
23	13000	59	2070	10500	171	4850	14000	1750	66100
24	12000	53	1720	10500	170	4820	14000	1770	66900
25	11000	48	1430	10500	177	5020	14000	1900	71800
26	11000	46	1370	10500	192	5440	11000	1260	37400
27	11000	40	1190	11000	208	6180	10800	575	16800
28	10800	27	787	11000	217	6440	10700	402	11600
29	10500	38	1080	11000	218	6470	10700	330	9530
30	11000	40	1190	---	---	---	10500	295	8360
31	11500	56	1740	---	---	---	10500	299	8480
TOTAL	282500	---	50900	312500	---	212321	330300	---	525680

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	10300	320	8900	14900	569	22900	38800	1000	105000
2	10300	322	8950	14300	620	23900	39800	975	105000
3	10200	280	7710	14100	567	21600	39300	865	91800
4	10300	220	6120	14900	585	23500	36800	820	81500
5	10300	179	4980	16600	747	33500	35200	1010	96000
6	10600	170	4870	17700	928	44300	37400	1040	105000
7	10600	182	5210	19500	1120	59000	41800	1650	186000
8	10300	202	5620	21100	1410	80300	44300	2930	350000
9	8200	225	4980	22100	1300	77600	44900	2180	264000
10	7570	249	5090	21900	995	58800	46000	1470	183000
11	9070	284	6950	21200	838	48000	44800	1140	138000
12	10400	345	9690	22100	850	50700	45700	1080	133000
13	11800	384	12200	23600	1070	68200	46400	990	124000
14	12100	366	12000	25100	1140	77300	48600	1440	189000
15	12400	379	12700	27000	1250	91100	47500	2270	291000
16	12600	481	16400	25800	1100	76600	45500	1800	221000
17	13500	615	22400	27100	950	69500	45400	1670	205000
18	13600	735	27000	31600	1390	119000	40000	1500	162000
19	13400	787	28500	31400	1300	110000	36800	1410	140000
20	13800	712	26500	29500	930	74100	38000	1180	121000
21	13400	670	24200	31000	860	72000	37100	1060	106000
22	12800	615	21300	35400	1170	112000	34800	1380	130000
23	12300	506	16800	37000	1360	136000	35200	1240	118000
24	12500	489	16500	37200	1140	115000	40000	1210	131000
25	12100	596	19500	38600	1070	112000	43300	1160	136000
26	12000	591	19100	39200	1190	126000	43700	1050	124000
27	11800	441	14100	37700	1090	111000	40300	1070	116000
28	11900	359	11500	37100	865	86600	36100	1090	106000
29	12700	348	11900	36100	800	78000	33200	1060	95000
30	14200	409	15700	34400	745	69200	30800	900	74800
31	---	---	---	35600	828	79600	---	---	---
TOTAL	347040	---	407370	840800	---	2327300	1217500	---	4428100
		JULY			AUGUST			SEPTEMBER	
1	28800	626	48700	11600	163	5110	6460	61	1060
2	28300	530	40500	11200	183	5530	6310	69	1180
3	31600	915	78100	11000	182	5410	6160	74	1230
4	33700	872	79300	11400	195	6000	6040	69	1130
5	35900	1010	97900	14500	604	23600	6040	56	913
6	32900	679	60300	16600	981	44000	6010	44	714
7	30800	474	39400	14500	913	35700	5920	34	543
8	28800	520	40400	12800	748	25900	5890	30	477
9	28600	512	39500	12400	531	17800	5950	31	498
10	29600	1050	83900	11800	416	13300	6340	33	565
11	29400	1860	148000	11200	440	13300	6700	35	633
12	26900	890	64600	10400	476	13400	6970	38	715
13	26200	542	38300	9930	478	12800	7150	40	772
14	25500	401	27600	9430	485	12300	7210	41	798
15	24200	400	26100	8980	518	12600	7360	41	815
16	23400	415	26200	8650	511	11900	7570	44	899
17	22100	325	19400	8440	436	9940	7840	49	1040
18	20600	340	18900	8170	336	7410	7960	53	1140
19	18600	383	19200	7870	225	4780	7840	54	1140
20	17300	397	18500	7570	156	3190	7720	51	1060
21	16700	418	18800	7300	128	2520	7660	45	931
22	17600	501	23800	7000	119	2250	7870	41	871
23	17700	485	23200	6700	116	2100	8140	41	901
24	16500	324	14400	6700	117	2120	8290	53	1190
25	15700	225	9540	6850	113	2090	8410	80	1820
26	15000	225	9110	6550	105	1860	8440	99	2260
27	13700	116	4290	6370	95	1630	8230	106	2360
28	13100	209	7390	6310	84	1430	8500	106	2430
29	12600	261	8880	6400	69	1190	9220	105	2610
30	12200	219	7210	6460	52	907	9310	106	2660
31	11900	168	5400	6430	53	920	---	---	---
TOTAL	705900	---	1146820	291510	---	302987	219510	---	35355
YEAR	5442320		9723369						

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON

Date	Length of exposure (days)	Biomass (g/m^2) Dry weight	Ash weight	Chlorophyll a (mg/m^2)	Chlorophyll b (mg/m^2)	Biomass pigment ratio	Sampling method
Oct 28	34	14.0	12.0	21.0	.400	87	Polyethylene strip

PHYTOPLANKTON
OCT. 28, 1975
1600 HOURS
6,800 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		200	3	
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		400	6	
		TOTALS	600	9	0.918=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		790	12	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		200	3	
	....COCCONEIS		200	3	
	...CYMBELLACEAE				
D	....CYMBELLA		990	15	
	...DIATOMACEAE				
	....DIATOMA		200	3	
	...NAVICULACEAE	NAVICULOID			
	....FRUSTULIA		200	3	
O	....NAVICULA		990	15	
	...NITZSCHIACEAE				
D	....NITZSCHIA		2,600	38	
		TOTALS	6,200	92	2.395=DIVERSITY

NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:

PHYL/DIV	0.431
CLASS	0.431
ORDER	1.017
FAMILY	2.522
GENERA	2.696

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
NOV. 25, 1975
1500 HOURS
1,700 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...SCENEDESMACEAE				
L	....SCENEDESMUS			0	
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		65	4	
		TOTALS	65	4	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		200	12	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
D	....ACHNANTHES		260	15	
	....COCCONEIS		130	8	
	...CYMBELLACEAE				
	....CYMBELLA		65	4	
	...DIATOMACEAE				
L	....DIATOMA			0	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		130	8	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		390	23	
	...NITZSCHIACEAE				
D	....NITZSCHIA		390	23	
		TOTALS	1,600	93	2.594=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.CRYPTOPHYCEAE	CRYPTOMONADS			
	..CRYPTOMONIDALES				
	...CRYPTOMONODACEAE				
	....CRYPTOMONAS		65	4	
		TOTALS	65	4	0.000=DIVERSITY

PHYL/DIV 0.468
CLASS 0.468
ORDER 0.970
FAMILY 2.651
GENERA 2.863

DEC. 30, 1975
1430 HOURS
320 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...SCENEDESMACEAE				
L	....SCENEDESMUS			0	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		38	12	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		10	3	
L	....COCCONEIS			0	
	....RHOICOSPHENIA		10	3	
	...CYMBELLACEAE				
	....CYMBELLA		10	3	
	...DIATOMACEAE				
	....DIATOMA		10	3	
	...FRAGILARIACEAE				
	....SYNEDRA		29	9	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		29	9	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		120	39	
	...NITZSCHIACEAE				
D	....NITZSCHIA		58	18	
		TOTALS	320	99	2.586=DIVERSITY

ORDER 0.533
FAMILY 2.525
GENERA 2.586

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
JAN. 28, 1976
1200 HOURS
260 CELLS/ML

	ORGANISM NAME	COMMON NAME		CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE				
	.CHLOROPHYCEAE					
	..VOLVOCALES					
	...CHLAMYDOMONADACEAE					
L	....CHLAMYDOMONAS				0	
	CHRYSOPHYTA					
	.BACILLARIOPHYCEAE	DIATOMS				
	..CENTRALES	CENTRIC				
	...COSCINODISCACEAE					
	....CYCLOTELLA			7	3	
	..PENNALES	PENNATE				
	...ACHNANTHACEAE					
	....ACHNANTHES			14	5	
	....COCCONEIS			14	5	
	...CYMBELLACEAE					
D	....CYMBELLA			48	18	
	...DIATOMACEAE					
	....DIATOMA			34	13	
	...FRAGILARIACEAE					
	....SYNEDRA			7	3	
	...GOMPHONEMATACEAE					
	....GOMPHONEMA			27	11	
	...MERIDIONACEAE					
	....MERIDION			7	3	
	...NAVICULACEAE	NAVICULOID				
D	....NAVICULA			68	26	
	...NITZSCHIACEAE					
	....NITZSCHIA			14	5	
	...SURIRELLACEAE					
	....CYMATOPLEURA			7	3	
	....SURIRELLA			7	3	
			TOTALS	250	98	3.088=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS				
	.EUGLENOPHYCEAE					
	..EUGLENALES					
	...EUGLENACEAE					
	....EUGLENA			7	3	
			TOTALS	7	3	0.000=DIVERSITY

PHYL/DIV	0.176
CLASS	0.176
ORDER	0.350
FAMILY	3.025
GENERA	3.183

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
FEB. 25. 1976
1400 HOURS
1,900 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		210	11	
		TOTALS	210	11	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		150	8	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		51	3	
	...CYMBELLACEAE				
	....CYMBELLA		260	13	
	...DIATOMACEAE				
	....DIATOMA		150	8	
	...FRAGILARIACEAE				
L	....SYNEDRA			0	
	...GOMPHONEMATACEAE				
	....GOMPHONEIS		51	3	
	....GOMPHONEMA		150	8	
	...NAVICULACEAE	NAVICULOID			
	....CALONEIS		51	3	
O	....NAVICULA		770	39	
	...NITZSCHIACEAE				
	....NITZSCHIA		51	3	
	...SURIRELLACEAE				
	....SURIRELLA		51	3	
		TOTALS	1,700	91	2.603=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
L	....OSCILLATORIA			0	
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
L	....TRACHELOMONAS			0	

PHYL/DIV 0.485
CLASS 0.485
ORDER 0.871
FAMILY 2.587
GENERA 2.814

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAR. 25, 1976
1330 HOURS
2,400 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...SCENEDESMACEAE				
L	....SCENEDESMUS			0	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		64	3	
	....MELOSIRA		130	5	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		64	3	
	....COCCONEIS		64	3	
	...CYMBELLACEAE				
	....CYMBELLA		190	8	
	...DIATOMACEAE				
	....DIATOMA		320	13	
	...FRAGILARIACEAE				
	....SYNEDRA		320	13	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		320	13	
	...NAVICULACEAE	NAVICULOID			
L	....CALONEIS			0	
L	....GYROSIGMA			0	
D	....NAVICULA		710	29	
	...NITZSCHIACEAE				
	....NITZSCHIA		260	11	
	...SURIRELLACEAE				
L	....CYMATOPLEURA			0	
L	....SURIRELLA			0	
		TOTALS	2,400	101	2.942=DIVERSITY

ORDER 0.398
FAMILY 2.817
GENERA 2.942

APR. 27, 1976
1400 HOURS
6,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		220	4	
	...SCENEDESMACEAE				
L	....CRUCIGENIA			0	
		TOTALS	220	4	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		2,600	43	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....COCCONEIS		220	4	
	...CYMBELLACEAE				
	....CYMBELLA		430	7	
	...FRAGILARIACEAE				
	....SYNEDRA		220	4	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		430	7	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		1,300	21	
	...NITZSCHIACEAE				
	....NITZSCHIA		430	7	
	...SURIRELLACEAE				
	....SURIRELLA		220	4	
		TOTALS	5,800	97	2.365=DIVERSITY

PHYL/DIV 0.222
CLASS 0.222
ORDER 1.178
FAMILY 2.503
GENERA 2.503

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAY 27, 1976
1500 HOURS
250 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...CYMBELLACEAE				
	....CYMBELLA		27	11	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		27	11	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		140	56	
	...NITZSCHIACEAE				
	....NITZSCHIA		27	11	
	...SURIRELLACEAE				
	....SURIRELLA		27	11	
		TOTALS	250	100	1.880=DIVERSITY

FAMILY 1.880
GENERA 1.880

JULY 27, 1976
1200 HOURS
48,000 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...COELASTRACEAE				
	....COELASTRUM		3,600	7	
	...OOCYSTACEAE				
	....ANKISTRODESMUS		680	1	
	...SCENEDESMACEAE				
	....SCENEDESMUS		900	2	
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
L	....CHLAMYDOMONAS			0	
		TOTALS	5,400	10	1.387=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		4,300	9	
O	....MELOSIRA		33,000	68	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
L	....RHOICOSPHENIA			0	
	...FRAGILARIACEAE				
L	....SYNEDRA			0	
	...NAVICULACEAE	NAVICULOID			
L	....CALONEIS			0	
	...NITZSCHIACEAE				
	....NITZSCHIA		5,400	11	
		TOTALS	43,000	88	1.087=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
L	....OSCILLATORIA			0	

PHYL/DIV 0.506
CLASS 0.506
ORDER 1.046
FAMILY 1.230
GENERA 1.627

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
SEP. 30, 1976
1230 HOURS
3,200 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		110	3	
	...SCENEDESMACEAE				
	....SCENEDESMUS		440	14	
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		190	6	
	...PHACOTACEAE				
	....PHACOTUS		27	1	
		TOTALS	760	24	1.534=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
D	....CYCLOTELLA		920	29	
	....MELOSIRA		82	3	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
L	....RHOICOSPHENIA			0	
	...CYMBELLACEAE				
	....CYMBELLA		140	4	
	...DIATOMACEAE				
	....DIATOMA		54	2	
	...FRAGILARIACEAE				
	....SYNEDRA		110	3	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		110	3	
	...NAVICULACEAE	NAVICULOID			
L	....CALONEIS			0	
L	....GYROSIGMA			0	
	....NAVICULA		82	3	
	...NITZSCHIACEAE				
D	....NITZSCHIA		900	28	
		TOTALS	2,400	75	2.158=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
L	....OSCILLATORIA			0	
	PYRRHOPHYTA	FIRE ALGAE			
	.DINOPHYCEAE	DINOFLAGELLATES			
	..PERIDINIALES				
	...PERIDINIACEAE				
	....PERIDINIUM		27	1	
		TOTALS	27	1	0.000=DIVERSITY

PHYL/DIV 0.862
CLASS 0.862
ORDER 1.806
FAMILY 2.723
GENERA 2.851

Smaller reservoirs in Missouri River basin in Montana

06012000 LIMA RESERVOIR.--Lat 44°39'16", long 112°21'54", in SW¼ sec.32, T.13 S., R.6 W., Beaverhead County, Hydrologic Unit 10020001, at Lima Dam on Red Rock River, 7 mi (11.3 km) northwest of Monida. DRAINAGE AREA, 570 mi² (1,476 km²). PERIOD OF RECORD, April 1940 to current year. Records prior to October 1950, published only in WSP 1309, and those for April 1955, published only in WSP 1729. Records of daily elevations available in files of Helena district office. Nonrecording gage read twice daily. Datum of gage is at mean sea level (levels by Montana Department of Natural Resources and Conservation).

Reservoir is formed by earthfill dam with concrete spillway completed in 1902. Usable capacity, 84,050 acre-ft (104 hm³) between elevation 6,537.30 ft (1,992.569 m), bottom of tunnel, and 6,582.7 ft (2,006.407 m), spillway crest. No dead storage. Figures given herein represent usable contents. Water is used for irrigation, flood control, and recreation. Records furnished by Water Users Irrigation Co. CORRECTION, In WSP 1916, the elevation of the minimum contents was listed incorrectly; it should be 6,545.98 ft or 1,995.215 m.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 85,220 acre-ft (105 hm³) May 13, 1952, elevation, 6,582.88 ft (2,006.462 m); minimum observed, 995 acre-ft (1.23 hm³) July 11, 1961, elevation, 6,545.98 ft (1,995.215 m).

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 81,320 acre-ft (100 hm³) May 17-28, elevation, 6,582.28 ft (2,006.279 m); minimum observed, 36,900 acre-ft (45.5 hm³) Sept. 21, elevation, 6,572.58 ft (2,003.322 m).

060205000 RUBY RIVER RESERVOIR.--Lat 45°14'21", long 112°06'35", in NE¼NE¼SE¼ sec.8, T.7 S., R.4 W., Madison County, Hydrologic Unit 10020003, at dam on Ruby River, 6 mi (9.7 km) south of Alder. DRAINAGE AREA, 596 mi (1,544 km²). PERIOD OF RECORD, July 1938 to April 1950, September 1954, May 1955, September to November 1955, and February to September 1960 (total contents), October 1960 to current year (usable contents). Records prior to October 1939, published only in WSP 1309, and those for September 1954, published only in WSP 1729. Elevations are determined by measuring from reference points in the middle and at or near the end of the month. Datum of gage is at mean sea level (levels by Montana Department of Natural Resources and Conservation).

Reservoir is formed by earthfill dam with concrete spillway, completed in 1938. Usable capacity, 38,850 acre-ft (47.9 hm³) between elevation 5,300.0 ft (1,615.44 m), bottom of tunnel, and 5,392.0 ft (1,643.48 m), spillway crest. Dead storage, 100 acre-ft (123,000 m³) below elevation 5,300.0 ft (1,615.44 m). Figures given herein represent usable contents. Water is used for irrigation and recreation. Records furnished by Montana Department of Natural Resources and Conservation. REVISED RECORDS, WSP 1729: Drainage area.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 46,040 acre-ft (56.8 hm³) Aug. 25, 1975, elevation, 5,399.0 ft (1,645.615 m); no storage at times in 1938, 1955, 1961.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 38,850 acre-ft (47.9 hm³) May 30, June 1, 8, 15, 28, elevation, 5,392.0 ft (1,643.48 m); minimum observed, 11,560 acre-ft (14.3 hm³) Sept. 30 (interpolated).

06036000 WILLOW CREEK RESERVOIR.--Lat 45°42'51", long 111°41'57", in NW¼NW¼NW¼ sec.35, T.1 S., R.1 W., Madison County, Hydrologic Unit 10020005, at dam on Willow Creek, 4 mi (6.4 km) east of Harrison. DRAINAGE AREA, 153 mi² (396 km²). PERIOD OF RECORD, February 1938 to March 1958 (total contents), April 1958 to current year (usable contents). Records prior to October 1939, published only in WSP 1309 and November, December 1951, published only in WSP 1729. Prior to October 1949, published as Harrison Lake near Harrison. Elevations determined by measuring from reference marks in the middle and at or near the end of the month. Datum of gage is at mean sea level (levels by Montana Department of Natural Resources and Conservation).

Reservoir is formed by earth and rockfill dam with concrete spillway completed in 1938. Usable capacity, 17,730 acre-ft (21.9 hm³) between elevation 4,666.5 ft (1,422.35 m), tunnel inlet, and 4,736.0 ft (1,443.53 m), spillway crest. Dead storage, 270 acre-ft (333,000 m³) below elevation 4,666.5 ft (1,422.35 m). Figures given herein represent usable contents. Water is used for irrigation and recreation. Records furnished by Montana Department of Natural Resources and Conservation. REVISED RECORDS, WSP 1629: 1958. WSP 1729: 1948(M), 1951-52, 1956-57.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 19,230 acre-ft (23.7 hm³) June 30, 1963, elevation, 4,736.7 ft (1,443.75 m); minimum observed, 2,270 acre-ft (2.80 hm³) Nov. 15, 1970, elevation, 4,705.0 ft (1,434.08 m).

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 17,730 acre-ft (21.9 hm³) May 15, June 1, 15, elevation, 4,736.0 ft (1,443.53 m); minimum observed, 3,040 acre-ft (3.75 hm³) Nov. 15, elevation, 4,709.0 ft (1,435.30 m).

06038000 HEBGEN LAKE.--Lat 44°51'51", long 111°20'09", in SW¼NW¼ sec.23, T.11 S., R.3 E., Gallatin County, Hydrologic Unit 10020007, at Hebgen Dam on Madison River, 18 mi (29 km) northwest of West Yellowstone, and at mile 103 (166 m). DRAINAGE AREA, 904 mi² (2,341 km²). PERIOD OF RECORD, January 1936 to current year. Records prior to October 1939, published only in WSP 1309. Figures of contents published in WSP 1629, 1709, and 1729 have been found to be in error and should not be used. Prior to Oct. 1, 1949, published as Hebgen Reservoir near West Yellowstone. Records of daily elevations since October 1955 on file in Helena district office. Nonrecording gage read about twice daily. Datum of gage is at mean sea level (levels by The Montana Power Co.). Prior to earthquake of Aug. 17, 1959, datum of gage was 9.74 ft (2.97 m) higher, also at mean sea level.

Reservoir is formed by earthfill dam with concrete core and spillway completed in 1915, repaired in 1960 following severe earthquake of Aug. 7, 1959, which lowered dam 9.74 ft (2.97 m) and deformed reservoir area. Subsequent usable capacity, 377,500 acre-ft (465 hm³) between elevation 6,473.00 ft (1,972.970 m), bottom of outlet tower, and 6,534.87 ft (1,991.828 m), spillway crest. Dead storage, 7,340 acre-ft (9.05 hm³) below elevation 6,473.00 ft (1,972.970 m). Prior to Aug. 17, 1959, usable capacity, 344,700 acre-ft between 6,483.11 ft (1,976.052 m), bottom of outlet tower, and 6,544.61 ft (1,994.797 m), spillway crest. No dead storage. Observations of reservoir level prior and subsequent to earthquake indicate smaller increases in capacity than indicated by new capacity table. Figures given herein represent usable contents. Water is used for power and recreation. Records furnished by The Montana Power Co. REVISED RECORDS, WSP 1916: 1959-60.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 377,500 acre-ft (65 hm³) on many days in 1962-64, 1970, 1972, 1974-76, elevation, 6,534.87 ft (1,991.828 m); minimum monthend, 670 acre-ft (826,000 m³) Dec. 31, 1936 (by capacity table used prior to August 1959).

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 377,500 acre-ft (465 hm³) July 17 to Sept. 6, elevation, 6,534.87 ft (1,991.828 m); minimum observed, 187,000 acre-ft (231 hm³) May 5, 6, elevation, 6,517.35 ft (1,986.488 m).

Smaller reservoirs in Missouri River basin in Montana--Continued

06040500 ENNIS LAKE.--Lat 45°28'12", long 111°38'15", in NW¼SW¼ sec.20, T.4 S., R.1 E., Madison County, Hydrologic Unit 10020007, at Madison Dam on Madison River, 5 mi (8.0 km) northeast of McAllister. DRAINAGE AREA, 2,181 mi^2 (5,649 km^2). PERIOD OF RECORD, January 1936 to September 1975 (total contents), October 1975 to current year (usable contents). Records prior to October 1939, published only in WSP 1309. Prior to 1949, published as Madison Reservoir near McAllister. Records of daily elevations since October 1955 on file in Helena district office. Nonrecording gage read about twice daily. Datum of gage is at mean sea level (levels by The Montana Power Co.).

Reservoir is formed by timber crib dam completed in 1900. Usable capacity, 41,020 acre-ft (50.6 hm^3) between elevation 4,826.5 ft (1,471.117 m), bottom of penstock, and 4,841.5 ft (1,475.689 m), top of flash-boards. Dead storage, 1,040 acre-ft (1.28 hm^3) below elevation 4,826.5 ft (1,471.117 m). Not normally drawn below 4,831.0 ft (1,472.489 m), 6,810 acre-ft (8.40 hm^3). Figures given herein represent usable contents. Water is used for power and recreation. Records furnished by The Montana Power Co.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 40,830 acre-ft (50.3 hm^3) June 20, 1968, elevation, 4,841.45 ft (1,475.674 m); minimum observed, 2,600 acre-ft (3.21 hm^3) Mar. 31, 1937, elevation, 4,828.8 ft (1,471.818 m).

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 39,030 acre-ft (48.1 hm^3) Aug. 25, 26, elevation, 4,841.25 ft (1,475.613 m); minimum observed, 29,930 acre-ft (36.9 hm^3) Feb. 5, elevation, 4,838.80 ft (1,474.866 m).

06049500 MIDDLE CREEK RESERVOIR.--Lat 45°29'18", long 110°58'42", in NW¼SW¼ sec.15, T.4 S., R.6 E., Gallatin County, Hydrologic Unit 10020008, at dam on Hyalite Creek, 14 mi (23 km) south of Bozeman. DRAINAGE AREA, 27.4 mi^2 (71.0 km^2). PERIOD OF RECORD, April 1951 to current year. Nonrecording gage read in the middle and at or near the end of month. Altitude of lake at full pond is about 6,700 ft (2,040 m), from topographic map.

Reservoir is formed by earthfill dam with conduit control works completed in 1951. Storage began in March 1951. Usable capacity, 8,030 acre-ft (9.90 hm^3) between gage height 125 ft (38.1 m), bottom of outlet, and 200.75 ft (61.19 m), spillway crest. Dead storage, 209 acre-ft (258,000 m^3) below gage height 125 ft (38.1 m). Figures given herein represent usable contents. Water is used for irrigation and municipal purposes. Records furnished by Montana Department of Natural Resources and Conservation.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 8,240 acre-ft (10.2 hm^3) May 31, 1966, gage height, 201.7 ft (61.48 m); minimum observed, 120 acre-ft (148,000 m^3) Oct. 18, 1965, gage height, 129.0 ft (39.32 m).

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 7,800 acre-ft (9.62 hm^3) June 29, July 15, gage height, 199.7 ft (60.87 m); minimum observed, 2,750 acre-ft (3.39 hm^3) Nov. 30, May 15, gage height, 166.3 ft (50.69 m).

06064500 LAKE HELENA.--Lat 46°45'58", long 111°53'10", in SE¼SW¼ sec.29, T.12 N., R.2 W., Lewis and Clark County, Hydrologic Unit 10030101, at Hauser Dam on Missouri River, 13 mi (21 km) northeast of Helena. DRAINAGE AREA, 610 mi^2 (1,580 km^2) above dam and control works on Prickly Pear Creek. PERIOD OF RECORD, May 1945 to current year. April to July 1953 scattered daily elevations and contents, published in WSP 1320-B. May to June 1964 daily elevations and contents, published in WSP 1840-B. Records of daily elevations since October 1955 on file in Helena district office. Nonrecording gage at Hauser Dam read hourly. Datum of gage is at mean sea level (levels by The Montana Power Co.).

Gage heights collected at Hauser Dam are effective on Lake Helena at control dam. Prior to April 1945, contents of Lake Helena included with records of Hauser Lake. Since that date, a dam and control works has separated the two lakes to allow independent regulation of Lake Helena, if needed. Usable capacity, 10,450 acre-ft (12.9 hm^3) between elevation 3,624.00 ft (1,104.595 m), bottom of control works, and 3,635.00 ft (1,107.948 m), top of flashboards. No dead storage. Figures given herein represent usable contents. Water is used for recreation, wildlife, and power production through Hauser Dam. Records furnished by The Montana Power Co.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 11,790 acre-ft (14.5 hm^3) Aug. 2, 1960, Dec. 10, 1962, July 19, 20, Sept. 4, 1963, Aug. 15, 1968, Apr. 6, 1973, elevation, 3,635.60 ft (1,108.131 m); no storage Mar. 29 to Apr. 7, 1958, Feb. 12, 20, 1962.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 11,110 acre-ft (13.7 hm^3) Nov. 16, Dec. 25, June 22, elevation, 3,635.30 ft (1,108.039 m); minimum observed, 10,450 acre-ft (12.9 hm^3) on many days, elevation, 3,635.00 ft (1,107.948 m).

06065000 HAUSER LAKE.--Lat 46°45'58", long 111°53'10", in SE¼SW¼ sec.29, T.12 N., R.2 W., Lewis and Clark County, Hydrologic Unit 10030101, at Hauser Dam on Missouri River, 1.6 mi (2.6 km) downstream from Prickly Pear Creek, 13 mi (21 km) northeast of Helena, and at mile 2,226.4 (3,582 km). DRAINAGE AREA, 16,876 mi^2 (43,709 km^2). PERIOD OF RECORD, January 1936 to current year. Records prior to October 1939, published only in WSP 1309. April to July 1953 scattered daily elevations and contents, published in WSP 1320-B. May to June 1964 daily elevations and contents, published in WSP 1840-B. Monthend contents prior to May 1945 include contents of Lake Helena, excluded thereafter. Records of daily elevations since October 1955 on file in Helena district office. Nonrecording gage read hourly. Datum of gage is at mean sea level (levels by The Montana Power Co.).

Reservoir is formed by concrete dam completed in 1907; separated from Lake Helena in April 1945. Usable contents, 51,420 acre-ft (63.4 hm^3) between elevation 3,617.00 ft (1,102.462 m), bottom of tunnel, and 3,635.00 ft (1,107.948 m), top of flashboards. Dead storage, 46,810 acre-ft (57.7 hm^3) below elevation 3,617.00 ft (1.102.462 m). Prior to Nov. 28, 1949, usable capacity, 52,090 acre-ft (64.2 hm^3) at elevation 3,635.00 ft (1,107.948 m), decrease caused by construction of new Canyon Ferry Dam in backwater of Hauser Dam. Not normally drawn below 3,621.00 ft (1,103.681 m), 8,870 acre-ft (10.9 hm^3). Figures given herein represent usable contents. Water is used for power and recreation. Records furnished by The Montana Power Co. REVISED RECORDS, WSP 1729: 1949-57.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed since May 1945, 53,630 acre-ft (66.1 hm^3) Aug. 2, 1960, Dec. 10, 1961, July 19, 20, Sept. 4, 1963, Aug. 15, 1968, Apr. 6, 1973, elevation, 3,635.60 ft (1,108.131 m); no storage Jan. 31, Feb. 29, 1936.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 52,520 acre-ft (64.8 hm^3) Nov. 16, Dec. 25, June 22, elevation, 3,635.30 ft (1,108.039 m); minimum observed, 51,420 acre-ft (63.4 hm^3) on many days, elevation 3,635.00 ft (1,107.948 m).

Smaller reservoirs in the Missouri River basin in Montana--Continued

06066000 HOLTER LAKE.--Lat 46°59'28", long 112°00'17", on line between SE¼ sec.5 and NE¼ sec.8, T.14 N., R.3 W., Lewis and Clark County, Hydrologic Unit 10030101, at Holter Dam on Missouri River, 3.3 mi (5.3 km) east of Wolf Creek, and at mile 2,204 (3,546 km). DRAINAGE AREA, 17,149 mi² (44,416 km²). PERIOD OF RECORD, January 1936 to current year. Records prior to October 1939, published only in WSP 1309. April to July 1953 scattered daily elevations and contents, published in WSP 1320-B. May to June 1964 daily elevations and contents, published in WSP 1840-B. Records of daily elevations since October 1955 on file in Helena district office. Prior to 1950, published as Holter Reservoir near Wolf Creek. Nonrecording gage read three times daily. Datum of gage is at mean sea level (levels by The Montana Power Co.).

Reservoir is formed by concrete dam completed in 1918. Usable capacity, 81,920 acre-ft (101 hm³) between elevation 3,543.00 ft (1,079.906 m), bottom of tunnel, and 3,564.00 ft (1,086.307 m), top of flashboards. Dead storage, 158,500 acre-ft (195 hm³) below elevation 3,543.00 ft (1,079.906 m). Not normally drawn below 3,548.00 ft (1,081.430 m), 16,660 acre-ft (20.5 hm³). Figures given herein represent usable contents. Water is used for power and recreation. Records furnished by The Montana Power Co.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 85,250 acre-ft (105 hm³) June 19, 1970, elevation, 3,564.70 ft (1,086.521 m); no storage Feb. 29, Dec. 31, 1936.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 83,780 acre-ft (103 hm³) Apr. 16, elevation, 3,564.39 ft (1,086.426 m); minimum observed, 75,770 acre-ft (93.4 hm³) Oct. 9, elevation, 3,561.69 ft (1,085.603 m).

06075000 SMITH RIVER RESERVOIR.--Lat 46°37'27", long 110°44'48", near center of south line of sec.17, T.10 N., R.8 W., Meagher County, Hydrologic Unit 10030103, at dam on Smith River, 9 mi (14.5 km) northeast of White Sulphur Springs. DRAINAGE AREA, 72.3 mi² (187.3 km²). PERIOD OF RECORD, April 1938 to September 1950 (scattered records 1947-50) and April to October 1959 (total contents), November 1959 to current year (usable contents). Records for some periods published only in WSP 1309 and for April 1959, published only in WSP 1729. Elevations determined by measuring from reference marks at or near middle and end of month. Datum of gage is at mean sea level (levels by Montana Department of Natural Resources and Conservation).

Reservoir is formed by earthfill dam with concrete spillway completed in 1936. Usable capacity, 10,650 acre-ft (13.1 hm³) between elevation, 5,415.0 ft (1,650.49 m), bottom of outlet, and 5,486.0 ft (1,672.13 m), spillway crest. Dead storage, 52 acre-ft (64,100 m³) below elevation 5,415.0 ft (1,650.49 m). Figures given herein represent usable contents. Water is used for irrigation and recreation. Records furnished by Montana Department of Natural Resources and Conservation. REVISED RECORDS, WSP 1729: 1960.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 11,600 acre-ft (14.3 hm³) Apr. 30, 1950, elevation, 5,488.6 ft (1,672.93 m); minimum observed, 90 acre-ft (111,000 m³) Sept. 12, 1973, elevation, 5,423.9 ft (1,653.20 m).

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 11,470 acre-ft (14.1 hm³) May 7, 15, June 1, 13, elevation, 5,488.5 ft (1,672.89 m); minimum observed, 6,800 acre-ft (8.38 hm³) Sept. 30 (interpolated).

06079500 GIBSON RESERVOIR.--Lat 47°36'09", long 112°45'39", in NE¼NW¼SE¼ sec.4, T.21 N., R.9 W., Teton County, Hydrologic Unit 10030104, at Gibson Dam on Sun River, 19 mi (31 km) northwest of Augusta, and at mile 99.9 (161 km). DRAINAGE AREA, 575 mi² (1,489 km²). PERIOD OF RECORD, January 1930 to current year. Records prior to October 1940, published only in WSP 1309. April to July 1953 scattered daily elevations and contents, published in WSP 1320-B. May to June 1964 daily elevations and contents, published in WSP 1840-B. Nonrecording gage read daily. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

Reservoir is formed by concrete dam with glory-hole type spillway completed in 1929. Usable capacity, 99,060 acre-ft (122 hm³) between elevation 4,557.5 ft (1,389.13 m), bottom of outlet, and 4,724.0 ft (1,439.88 m), top of glory-hole, by capacity table effective Aug. 1, 1975; see previous reports for superseded figures. Dead storage, 16 acre-ft (19,700 m³) below elevation 4,557.5 ft (1,389.13 m). Figures given herein represent usable contents. Water is used for irrigation and recreation. Records furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD: Maximum contents, 116,400 acre-ft (144 hm³) June 8, 1964, elevation, 4,732.23 ft (1,442.384 m), from floodmark, of which 11,600 acre-ft (14.3 hm³) was uncontrolled storage, by capacity table used Oct. 1, 1965, to July 30, 1975; minimum observed, 11 acre-ft (13,600 m³) Oct. 13, 1936, elevation, 4,560.9 ft (1,390.16 m), by capacity table used prior to 1939.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 99,300 acre-ft (122 hm³) July 1, elevation, 4,724.2 ft (1,439.94 m); minimum observed, 46,310 acre-ft (57.1 hm³) Sept. 30, elevation, 4,673.4 ft (1,424.45 m).

06080500 PISHKUN RESERVOIR.--Lat 47°40'36", long 112°29'48", in W½ sec.10, T.22 N., R.7 W., Teton County, Hydrologic Unit 10030104, at dam 14 mi (23 km) northwest of Augusta. PERIOD OF RECORD, January 1936 to current year. Records prior to October 1940, published only in WSP 1309. April to July 1953 scattered daily elevations and contents, published in WSP 1320-B. Nonrecording gage read one or more times a month. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

This is an offstream reservoir formed by two earthfill dams completed in 1919. Stored water is diverted from Sun River in sec.36, T.22 N., R.9 W., 18 mi (29 km) northwest of Augusta. Usable capacity, 32,050 acre-ft (39.5 hm³) between elevation 4,342.0 ft (1,323.44 m), bottom of outlet, and 4,371.0 ft (1,332.28 m), maximum pool. Dead storage, 16,400 acre-ft (20.2 hm³) below elevation 4,342.0 ft (1,323.44 m). Prior to 1940, usable capacity varied from 3,600 to 21,750 acre-ft (4.44 to 26.8 hm³). Figures given herein represent usable contents. Water is used for irrigation, recreation, and wildlife. Records furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 32,700 acre-ft (40.3 hm³) July 4-6, 1953, elevation, 4,371.4 ft (1,332.40 m); no storage October 1939 to March 1940, Oct. 31, 1967.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 31,400 acre-ft (38.7 hm³) May 19, elevation, 4,370.6 ft (1,332.16 m); minimum observed, 11,430 acre-ft (14.1 hm³) Sept. 8, elevation, 4,355.3 ft (1,327.50 m).

06082000 WILLOW CREEK RESERVOIR.--Lat 47°32'48", long 112°25'45", in SW¼NW¼ sec.30, T.21 N., R.6 W., Lewis and Clark County, Hydrologic Unit 10030104, at dam on Willow Creek, 4 mi (6.4 km) northwest of Augusta. PERIOD OF RECORD, January 1936 to September 1960 (total contents), October 1960 to current year (usable contents). Records prior to October 1940, published only in WSP 1309. April to July 1953 scattered daily elevations and contents, published in WSP 1320-B. Nonrecording gage read one or more times a month. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

Reservoir is formed by earthfill dam completed in 1911. Usable capacity, 32,230 acre-ft (39.7 hm³) between elevation 4,085.28 ft (1,245.193 m), bottom of outlet, and 4,142.0 ft (1,262.48 m), maximum pool. Dead storage, 67 acre-ft (82,600 m³) below elevation 4,085.28 ft (1,245.193 m). Prior to 1941, total capacity was 16,700 acre-ft (20.6 hm³). Supplemental water diverted from Sun River in sec.36, T.22 N., R.9 W., 18 mi (29 km) northwest of Augusta. Figures given herein represent usable contents. Water is used for irrigation, recreation, and wildlife. Records furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 35,230 acre-ft (43.4 hm³) June 22, 1975, elevation, 4,144.0 ft (1,263.09 M0; no storage July 31, Aug. 31, 1940.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 30,850 acre-ft (38.0 hm³) June 22, elevation, 4,141.0 ft (1,262.18 m); minimum observed, 23,960 acre-ft (29.5 hm³) Oct. 1, elevation, 4,136.0 ft (1,260.65 m).

Smaller reservoirs in Missouri River basin in Montana--Continued

06083000 NILAN RESERVOIR.--Lat 47°29'06", long 112°32'24", in S½NE¼ sec.18, T.20 N., R.7 W., Lewis and Clark County, Hydrologic Unit 10030104, at north dam, lat 47°28'18", long 112°30'54", in SE¼NE¼ sec.20, T.20 N., R.7 W., at east dam, 6 mi (9.7 km) west of Augusta. PERIOD OF RECORD, December 1951 to current year. April to July 1953 scattered daily contents, published in WSP 1320-B. Records for November 1958 to March 1959, published only in WSP 1729. Nonrecording gage read at middle and end of month. Datum of gage is at mean sea level (levels by Montana Department of Natural Resources and Conservation).

This is an offstream reservoir formed by two earthfill dams completed in 1951. Usable capacity, 10,090 acre-ft (12.4 hm^3) between elevation 4,402.0 ft (1,341.73 m), bottom of outlet, and 4,442.5 ft (1,354.07 m), spillway crest. Dead storage, 900 acre-ft (1.11 hm^3) below elevation 4,402.0 ft (1,341.73 m), not including contents of old lake. Stored water is diverted from Smith Creek in NE¼ sec.4, T.19 N., R.8 W., and from Ford Creek in SW¼ sec.26, T.20 N., R.8 W., at points 12 mi (19.3 km) and 10 mi (16.1 km), respectively, southwest of Augusta. Figures given herein represent usable contents. Water is used for irrigation and recreation. Records furnished by Montana Department of Natural Resources and Conservation.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 13,520 acre-ft (16.7 hm^3) May 31, 1963, elevation, 4,448.5 ft (1,355.90 m); minimum observed since first filling, 104 acre-ft (128,000 m^3) Sept. 30, Oct. 1, 1973, computed on basis of canal inflow-outflow study.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 10,040 acre-ft (12.4 hm^3) June 30, elevation, 4,442.4 ft (1,354.04 m); minimum observed, 5,840 acre-ft (7.20 hm^3) Sept. 30 (interpolated).

06090900 LOWER TWO MEDICINE LAKE.--Lat 48°29'39", long 113°15'49", in NE¼ sec.34, T.32 N., R.13 W., Glacier County, Hydrologic Unit 10030201, at dam on Two Medicine River, 4 mi (6.4 km) northwest of East Glacier. DRAINAGE AREA, 50.2 mi^2 (130 km^2). PERIOD OF RECORD, September 1938 to June 1964 (dam destroyed), December 1967 to current year. Figures of no storage prior to April 1961 may be in error and should be used with caution. Records prior to October 1940, published only in WSP 1309. April to July 1953 scattered daily elevations and contents, published in WSP 1320-B. May to June 1964 occasional elevations and contents, published in WSP 1840-B. Prior to 1942, published as Two Medicine Lake near East Glacier. Nonrecording gage read at or near end of month. Datum of gage is at mean sea level (levels by Bureau of Reclamation) and is 8.22 ft (2.505 m) higher than datum for destroyed dam (levels by Bureau of Indian Affairs).

Reservoir is formed by earthfill dam with concrete spillway and control works; construction began in September 1965, completed in November 1967. Storage began Dec. 1, 1967. Former dam 250 ft (76.2 m) upstream completed in 1913 and destroyed by flood of June 8, 1964. Usable capacity at new dam, 11,880 acre-ft (14.6 hm^3) between elevation 4,861.0 ft (1,481.63 m), bottom of outlet, and 4,882.0 ft (1,488.03 m), spillway crest. Dead storage, about 2,000 acre-ft (2.47 hm^3) near upper end of reservoir below elevation 4,861.0 ft (1,481.63 m). Prior to June 8, 1964 at site and datum then in use, usable capacity was 16,620 acre-ft (20.5 hm^3) between elevation 4,848.00 ft (1,477.670 m), elevation of natural outlet, and 4,878.0 ft (1,486.81 m), spillway crest. Dead storage was unknown. Figures given herein represent usable contents. Water is used for irrigation and recreation. Records furnished by Bureau of Indian Affairs. REVISED RECORDS, WSP 1729: Drainage area.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 20,930 acre-ft (25.8 hm^3) June 8, 1964, elevation, 4,883.8 ft (1,488.58 m), datum and capacity table then in use, dam overtopped; possibly no storage at times in some years.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 12,340 acre-ft (15.2 hm^3) July 6, 13, elevation, 4,882.8 ft (1,488.28 m); minimum observed, 5,100 acre-ft (6.29 hm^3) Oct. 1, elevation, 4,872.0 ft (1,484.00 m).

06093000 FOUR HORNS LAKE.--Lat 48°20'33", long 112°41'48", in SW¼NW¼SE¼ sec.19, T.30 N., R.8 W., Glacier County, Hydrologic Unit 10030201, at dam 7 mi (11.3 km) northeast of Heart Butte. PERIOD OF RECORD, September 1938 to current year. Records prior to October 1940, published only in WSP 1309 and those for December 1958 to August 1959, published only in WSP 1729. April to July 1953 scattered daily elevations and contents, published in WSP 1320-B. Prior to 1950, published as Four Horns Reservoir near Heart Butte. Nonrecording gage read at or near end of month. Datum of gage is at mean sea level (levels by Bureau of Indian Affairs).

This is an offstream reservoir formed by earthfill dam completed in 1932. Stored water is diverted from Badger Creek in NE¼ sec.24, T.30 N., R.10 W., 5 mi (8.0 km) north of Heart Butte. Usable capacity, 19,250 acre-ft (23.7 hm^3) between elevation 4,081.0 ft (1,243.89 m), gate sill, and 4,115.0 ft (1,254.25 m), maximum design level. No dead storage. Figures given herein represent usable contents. Water is used for irrigation and recreation. Records furnished by Bureau of Indian Affairs.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 16,320 acre-ft (20.1 hm^3) Aug. 5, 1958, elevation, 4,111.6 ft (1,253.22 m); minimum observed, 2,840 acre-ft (3.50 hm^3) July 31, 1949, elevation, 4,090.0 ft (1,246.63 m).

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 14,130 acre-ft (17.4 hm^3) Nov. 3, Feb. 3, elevation, 4,108.9 ft (1,252.39 m); minimum observed, 3,000 acre-ft (3.70 hm^3) Sept. 30 (estimated).

06094000 SWIFT RESERVOIR.--Lat 48°09'53", long 112°52'20", in NE¼ sec.27, T.28 N., R.10 W., Pondera County, Hydrologic Unit 10030201, at Swift Dam on Birch Creek, 17 mi (27 km) west of Dupuyer. DRAINAGE AREA, 75.3 mi^2 (195 km^2). PERIOD OF RECORD, January 1936 to June 1964 (dam destroyed), June 1967 to current year. Records prior to October 1940, published only in WSP 1309. April to July 1953 scattered daily elevations and contents, published in WSP 1320-B. April to June 1964 scattered daily elevations and contents, published in WSP 1840-B. Prior to 1950, published as Birch Creek Reservoir near Dupuyer. Nonrecording gage read monthly. Datum of gage is at mean sea level (levels by Bureau of Reclamation) and is 63.7 ft (19.4 m) lower than datum for destroyed dam (levels by Pondera County Canal and Reservoir Co.).

Reservoir is formed by concrete arch dam; construction began in 1965; completed in 1967. Storage began in June 22, 1967. Former dam, in same location, was built about 1915 and destroyed by flood of June 8, 1964. Usable capacity at new dam, 29,980 acre-ft (37.0 hm^3) between elevation 4,748.0 ft (1,477.19 m), bottom of outlet, and 4,883.5 ft (1,488.49 m), spillway crest. Dead storage, 35 acre-ft (43,200 m^3) below elevation 4,808.2 ft (1,465.54 m), bottom of outlet, and 4,947.0 ft (1,507.85 m), spillway crest. Dead storage was negligible. Figures given herein represent usable contents. Water is used for irrigation. Records burnished by Pondera County Canal and Reservoir Co. REVISED RECORDS, WSP 1729: Drainage area.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 34,300 acre-ft (42.3 hm^3) June 8, 1964, elevation, 4,956.3 ft (1,510.68 m), datum then in use; minimum observed, 20 acre-ft (24,700 m^3) Sept. 30, 1952, elevation, 4,810.0 ft (1,466.09 m), datum then in use.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 29,360 acre-ft (36.2 hm^3) May 31, elevation, 4,882.1 ft (1,488.06 m); minimum observed, 13,350 acre-ft (16.5 hm^3) Sept. 30, elevation, 4,840.0 ft (1,475.23 m).

Smaller reservoirs in Missouri River basin in Montana--Continued

06095500 LAKE FRANCES.--Lat 48°15'48", long 112°12'24", in NE¼NE¼ sec.23, T.29 N., R.5 W., Pondera County, Hydrologic Unit 10030203, at dam 3 mi (4.8 km) southeast of Valier. PERIOD OF RECORD, January 1936 to current year. Records prior to October 1940, published only in WSP 1309. April to July 1953 scattered daily elevations and contents, published in WSP 1320-B. Nonrecording gage read at or near end of month. Datum of gage is at mean sea level (levels by Pondera County Canal and Reservoir Co.).

This is an offstream reservoir formed by earthfill dam completed about 1913. Stored water is diverted from Birch Creek in sec.28, T.29 N., R.8 W., and Dupuyer Creek in sec.28, T.29 N., R.6 W., at points 20 mi (32 km) and 6 mi (9.7 km), respectively, west of dam. Usable capacity, 111,900 acre-ft (138 hm^3) between elevation 3,787.40 ft (1,154.400 m), outlet sill, and 3,816.00 ft (1,163.117 m), maximum design level. Dead storage is estimated at 5,000 acre-ft (6.17 hm^3) below elevation 3,787.40 ft (1,154.400 m). Figures given herein represent usable contents. Water is used for irrigation. Records furnished by Pondera County Canal and Reservoir Co.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 111,400 acre-ft (137 hm^3) June 4, 1953, elevation, 3,815.92 ft (1,163.092 m); minimum observed, 4,560 acre-ft (5.62 hm^3) Jan. 31, 1938, elevation, 3,789.36 ft (1,154.997 m).

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 103,300 acre-ft (127 hm^3) June 30, elevation, 3,814.40 ft (1,162.629 m); minimum observed, 84,300 acre-ft (104 hm^3) Sept. 30, elevation, 3,810.66 ft (1,161.489 m).

06110500 ACKLEY LAKE.--Lat 46°57'19", long 109°55'55", in SE¼ sec.22, T.14 N., R.14 E., Judith Basin County, Hydrologic Unit 10040103, at dam 4 mi (6.4 km) southwest of Hobson. PERIOD OF RECORD, June 1938 to September 1960 (total contents), October 1960 to current year (usable contents). Records prior to October 1939, published only in WSP 1309. Nonrecording gage read usually at or near middle and end of month. Altitude of gage is about 4,300 ft (1,310 m), from topographic map.

This is an offstream reservoir formed by earthfill dam with concrete conduits completed in 1938. Water is diverted from Judith River near center of east line of sec.14, T.14 N., R.13 E., 7.5 mi 12.1 km) west of Hobson. Usable capacity, 5,820 acre-ft (7.18 hm^3) between gage height 45.0 ft (13.72 m), bottom of outlet, and 82.67 ft (25.198 m), spillway crest. Dead storage, 325 acre-ft (401,000 m^3) below gage height 45.0 ft (13.72 m). Figures given herein represent usable contents. Water is used for irrigation. Records furnished by Montana Department of Natural Resources and Conservation.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed (corrected to usable contents), 6,150 acre-ft (7.58 hm^3) Sept. 1, 1975, gage height, 84.0 ft (25.6 m); minimum observed, 893 acre-ft (1.10 hm^3) Apr. 1, 1974, gage height, 55.0 ft (16.76 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 6,030 acre-ft (7.44 hm^3) July 1, gage height, 83.5 ft (25.5 m); minimum observed, 3,930 acre-ft (4.85 hm^3) Sept. 1, gage height, 74.5 ft (22.7 m).

06116500 BAIR RESERVOIR.--Lat 46°34'47", long 110°33'24", in SE¼SE¼SW¼ sec.35, T.10 N., R.9 E., Meagher County, Hydrologic Unit 10040201, at dam on North Fork Musselshell River, 1 mi (1.6 km) northwest of Delpine and 14 mi (23 km) northwest of Martinsdale. DRAINAGE AREA, 48.6 mi^2 (126 km^2). PERIOD OF RECORD, November 1939 to September 1960 (total contents), winter records incomplete some years during 1951-59, October 1960 to current year (usable contents). Records for November 1939, published only WSP 1309. Prior to October 1969, published as "Durand Reservoir." Nonrecording gage read at or near middle and end of month. Datum of gage is at mean sea level (levels by Montana Department of Natural Resources and Conservation).

Reservoir is formed by earthfill dam with concrete spillway completed in 1939. Usable capacity, 7,000 acre-ft (8.63 hm^3) between elevation 5,253.2 ft (1,601.18 m), bottom of inlet, and 5,325.0 ft (1,623.06 m), spillway crest. Dead storage, 24 acre-ft (29,600 m^3) below elevation 5,253.2 ft (1,601.18 m). Supplemental water can be diverted from Checkerboard Creek in S½ sec.5, T.9 N., R.9 E., but seldom used. Figures given herein represent usable contents. Water is used for irrigation. Records furnished by Montana Department of Natural Resources and Conservation. REVISED RECORDS, WSP 1729: Drainage area.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 7,150 acre-ft (8.82 hm^3) June 15, 1967, elevation, 5,325.5 ft (1,623.21 m); no storage July 31, 1961.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 7,120 acre-ft (8.78 hm^3) May 2, elevation, 5,325.4 ft (1,623.18 m); minimum observed, 3,510 acre-ft (4.33 hm^3) Sept. 30 (interpolated).

06119000 MARTINSDALE RESERVOIR.--Lat 46°27'17", long 110°16'02", in NE¼NW¼SE¼ sec.18, T.8 N., R.12 E., Wheatland County, Hydrologic Unit 10040201, at north dam 2 mi (3.2 km) east of Martinsdale, lat 46°26'33", long 110°15'30", in NE¼ sec.20, T.8 N., R.12 E., at south dam 3 mi (4.8 km) southeast of Martinsdale. PERIOD OF RECORD, November 1939 to September 1960 (total contents), winter records incomplete for some years during 1951-59, October 1960 to current year (usable contents). Records for November 1939, published only in WSP 1309. Nonrecording gage read at or near middle and end of month. Datum of gage is at mean sea level (levels by Montana Department of Natural Resources and Conservation).

This is an offstream reservoir formed by two earthfill dam with concrete conduit and spillway completed in 1939. Stored water is diverted from South Fork Musselshell River in N½ sec.15, T.8 N., R.11 E., at a point 1 mi (1.6 km) west of Martinsdale. Usable capacity, 23,110 acre-ft (28.5 hm^3) between elevation 4,714.67 ft (1,437.03 m), bottom of outlet, and 4,779.0 ft (1,456.64 m), spillway crest. Dead storage, 73 acre-ft (90,000 m^3) below elevation 4,714.67 ft (1,437.03 m). South Fork Musselshell River flow above diversion is supplemented at times with return flow from lands irrigated by water diverted from North Fork Musselshell River. Figures given herein represent usable contents. Water is used for irrigation. Records furnished by Montana Department of Natural Resources and Conservation.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 23,110 acre-ft (28.5 hm^3) June 15, 1974, July 5, 1975, elevation, 4,779.0 ft (1,456.64 m); no storage July 31, Aug. 31, Sept. 30, Oct. 31, 1961.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 21,890 acre-ft (27.0 hm^3) Oct. 11, elevation, 4,777.7 ft (1,456.24 m); minimum observed, 15,210 acre-ft (18.8 hm^3) Sept. 30 (interpolated).

06122500 DEADMAN'S BASIN RESERVOIR.--Lat 46°20'24", long 109°24'35", in NE¼ sec.25, T.7 N., R.18 E., Wheatland County, Hydrologic Unit 10040201, at dam 6 mi (9.7 km) east of Shawmut. PERIOD OF RECORD, June 1941 to June 1955 (some contents may be total), July 1955 to current year (usable contents), incomplete 1942, 1951-59. Nonrecording gage read at or near middle and end of month. Datum of gage is at mean sea level (levels by Montana Department of Natural Resources and Conservation).

This is an offstream reservoir formed by earthfill dam completed in 1941. Stored water is diverted from Musselshell River in NW¼ sec.8, T.7 N., R.17 E., 6 mi (9.7 km) northwest of Shawmut. Usable capacity, 72,220 acre-ft (89.0 hm^3) between elevation 3,872.0 ft (1,180.19 m), bottom of outlet, and 3,921.0 ft (1,195.12 m), maximum design level. Prior to 1958, usable capacity was 52,500 acre-ft (64.7 hm^3) at elevation 3,911.0 ft (1,192.07 m). Dead storage, 4,600 acre-ft (5.67 hm^3) below elevation 3,872.0 ft (1,180.19 m). Figures given herein represent usable contents. Water is used for irrigation. Records furnished by Montana Department of Natural Resources and Conservation.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 72,620 acre-ft (89.5 hm^3) June 30, 1975, elevation, 3,921.2 ft (1,195.18 m); minimum observed, 3,290 acre-ft (4.06 hm^3) Oct. 31, 1961, elevation, 3,867.3 ft (1,178.75 m).

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 68,750 acre-ft (84.8 hm^3) June 2, elevation, 3,919.3 ft (1,194.60 m); minimum observed, 40,640 acre-ft (50.1 hm^3) Sept. 14, 29, 30, elevation, 3,904.5 ft (1,190.09 m).

Smaller reservoirs in Missouri River basin in Montana--Continued

06136500 FRESNO RESERVOIR.--Lat 48°36'04", long 109°56'45", in SE¼ sec.19, T.33 N., R.14 E., Hill County, Hydrologic Unit 10050002, at dam on Milk River, 13 mi (20.9 km) west of Havre and at mile 440 (708 km). DRAINAGE AREA, 3,766 mi² (9,754 km²) of which 670 mi² (1,735 km²) is probably noncontributing. PERIOD OF RECORD, January 1940 to current year. Records prior to September 1940, published only in WSP 1309. March to May 1952 daily elevations and contents, published in WSP 1260-B. April to July 1953 scattered daily elevations and contents, published in WSP 1320-B. Records of daily contents in files of Helena district office. Nonrecording gage read daily. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

Reservoir is formed by earthfill dam with concrete spillway completed in 1939. Usable capacity, 127,200 acre-ft (157 hm³) between elevation 2,530.00 ft (771.144 m), invert of tunnel inlet, and 2,575.00 ft (784.860 m), spillway crest. Elevation of maximum water surface is 2,591.00 ft (789.737 m), 243,600 acre-ft (300 hm³). Crest of dam is 2,595.00 ft (790.956 m). There are no gates in the spillway. Dead storage, 1,860 acre-ft (2.29 hm³) below elevation 2,530.00 ft (771.144 m). Figures given herein represent usable contents. Water is used for irrigation and recreation. Records furnished by Bureau of Reclamation. REVISED RECORDS, WSP 1729: Drainage area.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 154,000 acre-ft (190 hm³) Apr. 3, 1952, elevation, 2,579.35 ft (786.186 m), of which 26,800 acre-ft (33.0 hm³) was uncontrolled storage; no storage Feb. 18 to Mar. 6, 1950.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 130,700 acre-ft (161 hm³) Mar. 29, elevation, 2,575.60 ft (785.043 m); minimum observed, 58,220 acre-ft (71.8 hm³) Sept. 9, 10, elevation, 2,559.50 ft (780.136 m).

06155000 NELSON RESERVOIR.--Lat 48°31'42", long 107°31'00", in SE¼ sec.14, T.32 N., R.32 E., Phillips County, Hydrologic Unit 10050004, at dam 10 mi (16.1 km) northwest of Saco. PERIOD OF RECORD, March 1928 to current year. Records prior to October 1940, published only in WSP 1309. Nonrecording gage read on first and last day of month and more often during high stages. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

This is an offstream reservoir formed by earthfill dam completed in 1922. Stored water is diverted from Milk River at Dodson Dam in SE¼ sec.26, T.31 N., R.26 E., 6 mi (9.7 km) west of Dodson. Usable capacity, 66,800 acre-ft (82.4 hm³) between elevation 2,200.0 ft (670.56 m), gate sill, and 2,223.0 ft (677.57 m), maximum design level. Dead storage, 18,650 acre-ft (23.0 hm³) below elevation 2,200.0 ft (670.56 m). Reservoir has never been operated to maximum capacity. Figures given herein represent usable contents. Water is used for irrigation, recreation, and wildlife. Records furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 60,570 acre-ft (74.7 hm³) July 12-14, 1965, elevation, 2,221.6 ft (677.14 m); minimum observed, 4,600 acre-ft (5.67 hm³) Mar. 31, 1937, elevation, 2,202.6 ft (671.35 m).

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 59,710 acre-ft (71.6 hm³) Oct. 30, 31, Nov. 1, elevation, 2,221.40 ft (676.083 m); minimum observed, 45,160 acre-ft (55.7 hm³) June 7, 10, elevation, 2,217.8 ft (675.99 m).

06204000 MYSTIC LAKE.--Lat 45°13'30", long 109°45'36", in sec.9, T.7 S., R.16 E., (unsurveyed), Stillwater County, Hydrologic Unit 10070005, at dam on West Rosebud Creek, 15 mi (24 km) southwest of Roscoe and 25 mi (40 km) southwest of Absarokee. DRAINAGE AREA, 46.9 mi² (121 km²). PERIOD OF RECORD, January 1936 to current year. Records prior to September 1939, published only in WSP 1309. Record of daily elevations since October 1965 available in files of Helena district office. Water-stage recorder. Prior to October 1965, only monthend figures furnished. Datum of gage is at mean sea level (levels by The Montana Power Co.).

Reservoir is formed by thin-section reinforced concrete arch dam completed in 1925. Usable capacity, 21,000 acre-ft (25.9 hm³) between elevation 7,612.00 ft (2,320.138 m), minimum operating level, and 7,673.50 ft (2,338.883 m), top of 3.5 ft (1.07 m) stop logs. No dead storage. Figures given herein represent usable contents. Water is used for power development and recreation. Records furnished by The Montana Power Co. REVISED RECORDS, WSP 1916: Drainage area.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 21,070 acre-ft (26.0 hm³) July 31, 1947, elevation, 7,673.68 ft (2,338.938 m); minimum observed, 260 acre-ft (321,000 m³) Apr. 4, 1938, elevation, 7,612.93 ft (2,320.421 m).

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 21,000 acre-ft (25.9 hm³) Aug. 29, elevation, 7,673.50 ft (2,338.883 m); minimum observed, 1,870 acre-ft (2.31 hm³) May 3, elevation, 7,618.44 ft (2,322.101 m).

06212000 COONEY RESERVOIR.--Lat 45°26'47", long 109°11'57", in N½NE¼ sec.36, T.4 S., R.20 E., Carbon County, Hydrologic Unit 10070006, at dam on Red Lodge Creek, 1 mi (1.6 km) upstream from Cottonwood Creek and 6.6 mi (10.6 km) west of Boyd. DRAINAGE AREA, 206 mi² (534 km²). PERIOD OF RECORD, May 1937 to September 1960 (total contents), incomplete 1954-60, October 1960 to current year (usable contents). Records prior to October 1939, published only in WSP 1309. Nonrecording gage read at or near middle and end of month. Datum of gage is at mean sea level.

Reservoir is formed by earthfill dam with concrete spillway completed in 1936. Usable capacity, 27,400 acre-ft (33.8 hm³) between elevation 4,175.0 ft (1,272.54 m), bottom of tunnel, and 4,250.0 ft (1,295.40 m), top of 4 ft (1.2 m) flashboards. Dead storage, 120 acre-ft (148,000 m³) below elevation 4,175.0 ft (1,272.54 m). Figures given herein represent usable contents. Water is used for irrigation. Records furnished by Montana Department of Natural Resources and Conservation. REVISED RECORDS, WSP 1729: Drainage area.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 26,990 acre-ft (33.3 hm³) June 15, 1967, elevation, 4,249.5 ft (1,295.25 m); minimum observed, 120 acre-ft (148,000 m³) Sept. 30, 1960, elevation, 4,175.0 ft (1,272.54 m).

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 19,840 acre-ft (24.5 hm³) May 15, elevation, 4,240.5 ft (1,292.50 m); minimum observed, 9,300 acre-ft (11.5 hm³) Oct. 15, elevation, 4,222.0 ft (1,286.87 m).

06307000 TONGUE RIVER RESERVOIR.--Lat 45°07'48", long 106°46'13", in SE¼SE¼NE¼ sec.13, T.8 W., R.40 E., Big Horn County, Hydrologic Unit 10090101, at dam on Tongue River, 4 mi (6.4 km) upstream from Post Creek, 7 mi (11.3 km) northeast of Decker, and at mile 162.8 (262 km). DRAINAGE AREA, 1,770 m² (4,584 km²). PERIOD OF RECORD, December 1938 to current year. Records prior to September 1939, published only in WSP 1309 and those for January, February 1956, published only in WSP 1729. Nonrecording gage read daily but only weekly readings supplied. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

Reservoir is formed by earthfill dam with concrete spillway completed in May 1939. Usable capacity, 68,040 acre-ft (83.9 hm³) between elevation 3,374.4 ft (1,028.52 m), bottom of outlet, and 3,424.4 ft (1,043.76 m), spillway crest. Prior to October 1947, usable contents was 73,950 acre-ft (91.2 hm³) at same elevations, due to sedimentation study. Dead storage, 1,400 acre-ft (1.73 hm³) below elevation 3,374.4 ft (1,028.52 m). Figures given herein represent usable contents. Water is used for irrigation. Records furnished by Montana Department of Natural Resources and Conservation. REVISED RECORDS, WSP 1309: 1947-50. WSP 1729: 1951, drainage area.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 73,620 acre-ft (90.8 hm³) June 16, 1967, elevation, 3,425.9 ft (1,044.21 m), datum and capacity table now in use; no storage October 1939 to February 1940.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 72,100 acre-ft (88.9 hm³) June 24, 25, elevation, 3,425.5 ft (1,044.09 m); minimum observed, 12,900 acre-ft (15.9 hm³) Sept. 19, elevation, 3,397.0 ft (1,035.41 m).

Smaller reservoirs in Missouri River basin in Montana--Continued

Monthend contents, in acre-feet, water year October 1975 to September 1976

Date	Lima Reservoir	Ruby River Reservoir	Willow Creek Reservoir	Hebgen Lake	Ennis Lake	Middle Creek Reservoir	Lake Helena
Sept. 30	37,830	16,840	b8,370	362,900	36,550	b3,360	10,890
Oct. 31	44,720	b16,340	b3,610	326,500	36,170	2,850	10,670
Nov. 30	44,520	19,710	b5,570	288,300	33,390	2,750	10,670
Dec. 31	43,920	a21,060	b9,510	288,300	34,130	b3,310	10,450
Jan. 31	a45,280	22,970	b12,380	288,300	33,200	a3,650	10,890
Feb. 29	46,920	b24,970	b14,540	288,300	34,320	3,870	10,890
Mar. 31	48,920	b31,540	b15,340	255,400	33,200	a4,070	10,670
Apr. 30	66,900	36,200	b16,140	195,600	33,940	a4,560	10,670
May 31	80,350	b38,850	b17,730	265,000	33,940	a6,360	10,670
June 30	65,650	b38,750	b14,540	360,200	35,620	a7,800	10,670
July 31	50,140	a32,420	b11,230	377,500	37,010	a6,670	10,890
Aug. 31	41,370	17,780	b6,500	377,500	38,070	a4,080	10,890
Sept. 30	37,360	a11,560	b8,940	371,100	37,120	a3,480	10,670

Date	Hauser Lake	Holter Lake	Smith River Reservoir	Gibson Reservoir	Pishkun Reservoir	Willow Creek Reservoir	Nilan Reservoir
Sept. 30	49,950	80,210	a9,120	61,610	17,230	24,300	8,070
Oct. 31	51,790	78,520	a9,210	67,130	17,870	25,390	7,940
Nov. 30	51,790	81,820	a9,270	59,450	17,870	26,070	7,800
Dec. 31	51,420	80,070	a9,250	65,080	17,870	26,890	7,760
Jan. 31	52,150	78,560	a9,330	67,890	17,620	27,700	a7,730
Feb. 29	52,150	78,940	9,580	69,430	17,620	28,110	7,710
Mar. 31	51,790	79,130	a9,430	70,430	17,230	28,790	7,620
Apr. 30	51,790	79,790	a11,030	61,810	30,130	29,770	8,480
May 31	51,790	81,440	b11,470	b85,150	b29,530	b29,620	9,100
June 30	51,790	78,940	b11,070	98,010	29,980	30,780	10,040
July 31	52,150	81,390	b9,550	77,890	23,480	28,520	7,310
Aug. 31	52,150	81,300	8,160	65,620	15,160	26,610	6,510
Sept. 30	51,790	80,020	a6,800	43,520	17,490	26,480	a5,840

Date	Lower Two Medicine Lake	Four Horns Lake	Swift Reservoir	Lake Frances	Ackley Lake	Bair Reservoir	Martinsdale Reservoir
Sept. 30	5,100	12,520	21,640	95,370	b4,700	a4,990	a19,320
Oct. 31	a11,420	a13,990	21,450	95,260	b4,480	a5,210	a16,820
Nov. 30	a12,010	a14,130	22,290	94,500	b4,480	a5,250	a17,520
Dec. 31	a11,990	a14,130	23,930	94,650	a4,420	a5,240	a17,430
Jan. 31	a11,960	a14,130	21,910	94,340	4,370	a5,520	a16,830
Feb. 29	-	a14,100	17,670	93,990	b4,260	a5,620	a16,040
Mar. 31	-	14,050	17,670	93,370	4,260	a5,740	a16,220
Apr. 30	-	a13,760	22,290	95,110	b5,900	a7,100	a17,800
May 31	-	a11,920	29,360	99,950	b5,900	b7,010	b21,600
June 30	-	11,170	26,720	103,300	b6,030	b6,680	b21,510
July 31	a12,090	a7,760	21,830	84,700	b4,480	b5,320	b20,940
Aug. 31	a11,260	c8,580	17,490	87,510	b3,930	4,480	18,190
Sept. 30	c8,800	c3,000	13,350	84,300	b4,040	a3,510	a15,210

Date	Deadman's Basin Reservoir	Fresno Reservoir	Nelson Reservoir	Mystic Lake	Cooney Reservoir	Tongue River Reservoir
Sept. 30	a54,270	123,200	57,170	19,650	c8,500	13,100
Oct. 31	a54,500	117,100	59,710	18,790	a12,090	19,540
Nov. 30	a54,520	b101,600	b54,270	16,990	a12,440	34,000
Dec. 31	a54,330	101,600	52,240	12,630	a12,260	35,200
Jan. 31	a53,970	a105,900	a50,610	7,160	b12,000	34,800
Feb. 29	53,840	b116,300	b49,840	3,540	12,000	36,800
Mar. 31	a54,090	b129,800	48,260	2,290	b11,230	b49,040
Apr. 30	a62,080	124,900	51,840	1,930	b16,020	36,600
May 31	a68,400	b97,020	b46,700	10,770	16,020	55,500
June 30	a66,970	b110,400	b55,920	20,110	18,830	59,790
July 31	b58,020	a81,940	a52,090	20,770	b18,220	50,120
Aug. 31	a46,680	60,940	50,640	20,870	15,100	30,900
Sept. 30	40,640	67,150	51,040	19,350	12,000	25,540

a Interpolated.
b Figure of contents for first day of following month.
c Estimate.

06334500 LITTLE MISSOURI RIVER AT CAMP CROOK, SD

LOCATION.--Lat 45°32'49", long 103°58'23", in SW¼ sec.2, T.18 N., R.1 E., Harding County, Hydrologic Unit 10110201, on left bank 15 ft (5 m) upstream from bridge on State Highway 20 at east edge of Camp Crook.

DRAINAGE AREA.--1,970 mi^2 (5,100 km^2), approximately.

PERIOD OF RECORD.--September 1903 to November 1906, May 1956 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1904. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,110.98 ft (948.227 m) above mean sea level. Sept. 2, 1903 to Nov. 30, 1906, nonrecording gage at site 0.5 mi (0.8 km) upstream at different datum. May 1956 to Oct. 8, 1957, nonrecording gage at site 15 ft (5 m) downstream at present datum.

REMARKS.--Records good except those for winter periods, which are poor. Small diversions above station for irrigation.

AVERAGE DISCHARGE.--23 years, 133 ft^3/s (3.823 m^3/s), 97,810 acre-ft/yr (121 hm^3/yr); median of yearly mean discharges, 110 ft^3/s (3.12 m^3/s), 79,700 acre-ft/yr (98 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,460 ft^3/s (240 m^3/s) May 7, 1975, gage height, 13.98 ft (4.261 m); maximum gage height, 14.43 ft (4.398 m) Mar. 20, 1975 (backwater from ice); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1952 reached a stage of about 16 ft (4.9 m) from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,800 ft^3/s (136 m^3/s) June 16, gage height, 11.22 ft (3.420 m); minimum daily, 2.4 ft^3/s (0.068 m^3/s) Aug. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	20	6.5	7.0	15	15	17	118	27	118	26	5.8
2	4.3	13	7.0	6.5	15	14	16	101	20	101	21	4.0
3	4.0	9.9	8.0	6.0	15	10	15	69	17	95	16	4.3
4	4.8	8.9	9.0	6.5	10	10	14	51	13	89	15	5.3
5	4.0	7.9	8.5	7.0	8.0	10	12	37	17	79	20	5.3
6	4.0	7.9	8.0	6.5	9.0	15	12	31	25	92	23	4.6
7	4.0	6.6	8.5	6.0	10	30	11	40	51	321	19	4.6
8	4.8	6.0	9.0	5.0	12	50	12	37	32	367	18	4.3
9	7.3	6.0	9.5	5.5	15	70	11	38	21	261	15	4.8
10	7.3	6.3	10	7.0	15	125	10	28	28	159	10	4.8
11	6.0	6.6	9.5	8.0	20	166	9.9	25	61	151	20	4.6
12	6.9	7.6	9.0	9.0	25	133	9.2	24	104	125	16	4.6
13	6.9	11	8.0	9.0	25	138	9.2	36	101	110	14	5.3
14	7.3	6.9	8.5	9.0	25	117	12	16	287	98	9.9	5.3
15	7.3	6.9	7.0	10	25	146	18	13	3430	86	11	5.3
16	8.2	6.9	6.5	12	20	159	15	12	4330	75	8.5	8.9
17	6.6	6.6	6.0	15	20	134	40	11	3690	102	5.8	5.6
18	6.6	6.6	7.0	15	20	100	37	8.9	3630	233	6.1	5.6
19	6.6	6.9	8.0	15	20	61	32	11	3140	183	5.8	6.3
20	6.6	7.0	8.5	15	15	44	71	31	2850	134	5.6	6.3
21	6.6	6.6	8.5	15	15	44	81	25	2340	118	2.4	5.0
22	7.6	6.6	8.5	15	17	75	92	25	1730	114	4.6	5.3
23	8.2	6.6	8.5	18	20	65	68	35	1160	95	8.2	5.3
24	8.2	6.5	8.5	15	25	49	46	55	771	82	8.9	5.6
25	7.6	6.0	9.0	12	25	36	37	60	536	74	9.5	6.9
26	7.3	6.0	9.0	15	25	31	24	38	390	66	7.9	6.6
27	7.3	6.0	9.0	18	25	25	22	27	297	55	6.6	6.3
28	6.9	6.0	9.0	20	25	22	26	20	227	44	5.1	2.8
29	6.9	6.0	9.0	20	20	23	27	20	178	37	2.8	2.6
30	6.3	6.0	9.0	17	---	20	30	46	143	32	3.6	2.6
31	14	---	8.0	16	---	18	---	36	---	31	6.6	---
TOTAL	204.4	227.6	258.0	361.0	536.0	1955	836.3	1124.9	29646	3727	352.1	154.6
MEAN	6.59	7.59	8.32	11.6	18.5	63.1	27.9	36.3	988	120	11.4	5.15
MAX	14	20	10	20	25	166	92	118	4330	367	26	8.9
MIN	4.0	6.0	6.0	5.0	8.0	10	9.2	8.9	13	31	2.4	2.6
AC-FT	405	452	512	716	1060	3880	1660	2230	58800	7390	698	307

CAL YR 1975 TOTAL 67755.85 MEAN 186 MAX 7600 MIN .25 AC-FT 134400
WTR YR 1976 TOTAL 39383.10 MEAN 108 MAX 4330 MIN 2.4 AC-FT 78120

06335000 LITTLE BEAVER CREEK NEAR MARMARTH, ND

LOCATION.--Lat 46°16'29", long 103°58'33", in NE¼ sec.7, T.132 N., R.106 W., Bowman County, Hydrologic Unit 10110201, on right bank 150 ft (46 m) downstream from concreted ford, 0.8 mi (1.3 km) downstream from Corral Creek, 3 mi (5 km) southwest of Marmarth, and 5 mi (8 km) upstream from mouth.

DRAINAGE AREA.--587 mi^2 (1,520 km^2), approximately.

PERIOD OF RECORD.--April 1938 to current year.

REVISED RECORDS.--WSP 1279: 1939(M), 1940, 1943-44(M), 1945, 1948.

GAGE.--Water-stage recorder. Datum of gage is 2,733.14 ft (833.061 m) above mean sea level. June 28, 1951 to May 17, 1968, water-stage recorder 300 ft (90 m) upstream at datum 10.00 ft (3.048 m) higher. See WSP 1729 or 1917 for history of changes prior to June 28, 1951.

REMARKS.--Records good.

AVERAGE DISCHARGE.--38 years, 43.4 ft^3/s (1.229 m^3/s), 31,440 acre-ft/yr (38.8 hm^3/yr), median of yearly mean discharges, 30 ft^3/s (0.85 m^3/s), 21,700 acre-ft/yr (27 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,700 ft^3/s (360 m^3/s) Apr. 6, 1952, gage height, 13.9 ft (4.24 m), from floodmark, site and datum then in use, from rating curve extended above 4,500 ft^3/s (127 m^3/s) on basis of slope-area measurement of peak flow; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,410 ft^3/s (39.9 m^3/s) June 23, gage height, 14.39 ft (4.386 m); minimum daily, 0.01 ft^3/s (0.0003 m^3/s) Sept. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	3.7	2.0	6.0	10	40	22	18	8.4	20	1.0	.06
2	3.3	3.9	2.5	6.0	45	30	21	17	7.0	20	.65	.12
3	3.7	4.3	3.0	5.5	35	30	21	15	8.4	161	.95	.02
4	4.1	4.8	3.5	5.5	10	35	21	15	5.1	31	1.0	.05
5	5.5	5.0	4.0	5.0	15	30	20	14	15	17	.95	.08
6	4.1	5.5	4.0	5.0	10	20	19	13	119	13	2.4	.01
7	4.6	5.6	4.5	5.0	10	20	17	14	36	12	11	.02
8	5.0	5.5	5.0	4.0	10	15	17	12	30	9.7	4.3	.02
9	4.8	5.0	5.0	4.0	10	51	16	10	15	8.8	2.7	.05
10	5.0	4.5	5.5	4.0	15	125	16	9.7	13	8.6	2.0	.06
11	5.5	4.0	5.0	4.0	20	114	16	6.6	12	7.0	1.4	.05
12	5.6	4.0	5.0	4.0	90	84	15	14	14	6.6	1.2	.08
13	5.5	4.0	4.5	4.0	296	55	15	47	16	5.1	1.2	.16
14	5.5	4.0	4.0	4.0	376	56	15	25	230	4.8	1.6	.24
15	5.8	4.5	3.0	4.0	409	58	15	20	306	4.5	.85	.29
16	5.8	5.0	2.0	4.0	235	53	16	18	95	3.9	.76	.12
17	5.8	4.0	1.5	4.0	147	61	47	14	110	3.7	.60	.29
18	6.2	4.0	1.5	4.5	144	95	56	13	61	3.5	.47	.35
19	6.6	4.0	1.5	4.5	123	79	50	14	60	3.5	.41	.35
20	7.0	4.0	2.0	5.0	102	68	57	13	49	19	.35	.29
21	7.3	4.0	2.0	5.0	90	68	45	12	39	31	.29	.35
22	7.7	3.5	2.0	5.0	90	69	36	12	32	26	.29	.29
23	9.7	3.5	2.5	5.0	90	60	24	10	661	6.1	.29	.35
24	9.3	3.0	2.5	5.5	92	55	26	10	145	4.6	.24	.41
25	8.8	3.0	3.0	6.0	104	36	25	11	102	3.7	.20	.47
26	8.1	2.5	3.5	6.5	125	35	21	6.8	84	2.7	.16	.47
27	7.3	2.5	6.5	6.0	109	28	20	12	53	1.2	.16	.47
28	6.9	2.0	7.0	5.0	78	27	18	10	39	1.6	.12	.61
29	6.6	2.0	7.0	4.5	51	25	18	8.9	31	1.4	.06	.68
30	4.6	2.0	7.5	4.5	---	24	16	8.4	25	1.4	.08	.53
31	4.6	---	7.5	4.5	---	23	---	8.1	---	1.2	.06	---
TOTAL	184.0	117.5	120.0	149.5	2939	1573	743	433.5	2460.9	439.6	37.98	7.38
MEAN	5.94	3.92	3.87	4.82	101	50.7	24.8	14.0	82.0	14.2	1.23	.25
MAX	9.7	5.8	7.5	6.5	409	125	57	47	681	161	11	.68
MIN	3.3	2.0	1.5	4.0	10	15	15	6.6	5.1	1.2	.06	.01
AC-FT	365	233	238	297	5830	3120	1470	860	4880	872	75	15

CAL YR 1975 TOTAL 17523.40 MEAN 48.0 MAX 1350 MIN 1.0 AC-FT 34760
WTR YR 1976 TOTAL 9205.36 MEAN 25.2 MAX 681 MIN .01 AC-FT 18260

KOOTENAI RIVER BASIN

12300110 LAKE KOOCANUSA AT INTERNATIONAL BOUNDARY

LOCATION.--Lat 48°59'44", long 115°10'43", in NE¼SW¼SE¼ sec.1, T.37 N., R.28 W., Lincoln County, Hydrologic Unit 17010101, 0.3 mi (0.5 km) south of international boundary, in middle of old channel 1.9 mi (3.1 km) upstream from Young Creek, and 6.4 mi (10.3 km) north of Rexford.

PERIOD OF RECORD.--Water years 1972 to current year.

REMARKS.--Vertical profiles for temperature, specific conductance, dissolved oxygen, pH, transmissibility, and natural light penetration are available in files in Helena district office.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	DISSOLVED OXYGEN (MG/L)	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT										
08...	1100	85	240	8.4	14.0	2	8.7	2.7	120	23
08...	1130	10	235	8.2	14.4	1	9.0	3.9	110	12
08...	1145	30	230	8.2	14.4	--	8.9	--	--	--
08...	1200	1.0	235	8.2	14.4	--	9.0	--	--	--
29...	0945	91	230	8.4	11.0	2	9.2	.2	110	11
29...	1000	10	230	8.3	11.2	2	9.2	.6	110	16
29...	1015	25	230	8.3	11.2	--	9.2	--	--	--
29...	1030	1.0	230	8.3	11.2	--	9.2	--	--	--
JUN										
25...	1030	75	165	8.4	10.8	1	9.8	.6	90	2
25...	1100	10	180	8.4	12.4	1	9.6	.8	96	9
25...	1130	20	175	8.4	12.4	--	9.6	--	--	--
25...	1200	1.0	180	8.4	12.4	--	9.6	--	--	--
JUL										
08...	1030	85	165	8.6	10.4	3	9.8	1.0	95	8
08...	1100	10	180	8.9	17.8	3	10.7	1.4	99	6
08...	1130	15	175	8.9	13.9	--	10.5	--	--	--
08...	1200	1.0	155	8.9	17.8	--	10.7	--	--	--
28...	1300	95	175	8.2	11.4	7	9.2	.8	95	11
28...	1330	10	195	8.7	18.4	8	9.1	.7	100	14
28...	1400	30	190	8.6	18.0	--	8.6	--	--	--
28...	1430	1.0	195	8.6	19.6	--	8.8	--	--	--
AUG										
10...	1100	100	185	8.3	13.4	17	8.4	.7	100	20
10...	1130	10	190	8.6	18.8	18	8.7	.8	110	18
10...	1230	25	190	8.6	18.3	--	8.7	--	--	--
10...	1300	1.0	190	8.6	18.8	--	8.7	--	--	--
SEP										
02...	1030	10	190	8.4	17.5	4	8.8	.6	100	13
02...	1230	93	195	8.2	14.0	3	8.5	.5	110	14
02...	1300	25	190	8.4	17.2	--	8.5	--	--	--
02...	1330	1.0	190	8.4	17.6	--	8.8	--	--	--
15...	1100	95	200	8.1	14.0	3	8.4	1.8	110	22
15...	1200	10	185	8.3	16.8	3	8.5	.5	100	18
15...	1300	40	185	8.3	16.4	--	8.5	--	--	--
15...	1330	1.0	185	8.3	16.8	--	8.5	--	--	--
28...	1000	10	190	8.5	16.8	2	9.0	.5	100	9
28...	1030	117	175	8.2	13.0	2	8.5	.7	120	20
28...	1100	40	195	8.3	16.2	--	8.4	--	--	--
28...	1130	1.0	190	8.5	16.8	--	9.1	--	--	--

12300110 LAKE KOOCANUSA AT INTERNATIONAL BOUNDARY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	SODIUM AD-SORP-TION RATIO	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)
OCT										
08...	35	8.3	1.7	.1	.5	120	0	98	.8	18
08...	30	7.5	1.5	.1	.4	114	0	94	1.2	16
08...	--	--	--	--	--	--	--	91	--	--
08...	--	--	--	--	--	--	--	93	--	--
29...	30	8.3	1.8	.1	.4	119	0	98	.8	19
29...	31	8.5	1.9	.1	.5	118	0	97	.9	18
29...	--	--	--	--	--	--	--	94	--	--
29...	--	--	--	--	--	--	--	94	--	--
JUN										
25...	25	6.8	1.2	.1	.4	108	0	89	.7	8.9
25...	26	7.6	1.3	.1	.5	106	0	87	.7	10
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
JUL										
08...	26	7.4	1.3	.1	.4	107	0	88	.4	14
08...	27	7.7	1.6	.1	.5	107	3	93	.2	16
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
28...	27	6.6	1.2	.1	.4	102	0	84	1.0	11
28...	30	7.2	1.5	.1	.4	111	0	91	.4	12
28...	--	--	--	--	--	--	--	85	--	--
28...	--	--	--	--	--	--	--	84	--	--
AUG										
10...	30	7.1	1.4	.1	.4	102	0	84	.8	13
10...	30	7.4	1.4	.1	.5	106	0	87	.4	13
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
SEP										
02...	29	7.7	1.5	.1	.5	111	0	91	.7	14
02...	30	8.0	1.8	.1	.4	115	0	94	1.2	17
02...	--	--	--	--	--	--	--	91	--	--
02...	--	--	--	--	--	--	--	89	--	--
15...	31	9.2	2.0	.1	.4	109	0	89	1.4	21
15...	28	7.4	1.6	.1	.4	101	0	83	.8	13
15...	--	--	--	--	--	--	--	87	--	--
15...	--	--	--	--	--	--	--	88	--	--
28...	28	7.4	1.5	.1	.4	111	0	91	.6	13
28...	34	9.3	2.0	.1	.4	126	0	103	1.3	22
28...	--	--	--	--	--	--	--	86	--	--
28...	--	--	--	--	--	--	--	86	--	--

12300110 LAKE KOOCANUSA AT INTERNATIONAL BOUNDARY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)
OCT										
08...	1.8	.3	3.7	125	.01	.01	.02	.01	.12	.13
08...	1.7	.4	3.5	120	.01	.00	.01	.01	.11	.12
08...	--	--	--	--	.01	.00	.01	.01	.41	.42
08...	--	--	--	--	.01	.00	.01	.01	.08	.09
29...	2.0	.3	3.3	118	.03	.01	.04	.00	.00	.00
29...	2.0	.3	3.5	119	.02	.01	.03	.04	.12	.16
29...	--	--	--	--	.02	.01	.03	--	--	.05
29...	--	--	--	--	.02	.01	.03	.04	.07	.11
JUN										
25...	1.5	.1	4.7	109	.08	.01	.09	.01	.12	.13
25...	1.9	.1	5.0	120	.06	.01	.07	.02	.11	.13
25...	--	--	--	--	.07	.01	.08	.02	.11	.13
25...	--	--	--	--	.07	.01	.08	.01	.07	.08
JUL										
08...	1.3	.1	3.4	114	.07	.00	.07	.00	.15	.15
08...	1.5	.1	1.3	118	.00	.00	.00	.00	.02	.02
08...	--	--	--	--	.00	.00	.00	.00	.02	.02
08...	--	--	--	--	.00	.00	.00	.00	.08	.08
28...	1.4	.1	3.6	100	.11	.00	.11	.00	.13	.13
28...	1.6	.2	2.8	109	.01	.00	.01	.00	.16	.16
28...	--	--	--	--	.01	.00	.01	.00	.21	.21
28...	--	--	--	--	.01	.00	.01	.00	.22	.22
AUG										
10...	1.6	.1	3.4	119	.11	.00	.11	.01	.08	.09
10...	1.5	.2	2.7	110	.17	.00	.17	.01	.08	.09
10...	--	--	--	--	.01	.00	.01	.00	.10	.10
10...	--	--	--	--	.02	.00	.02	.00	.11	.11
SEP										
02...	2.1	.1	2.9	120	.02	.00	.02	.00	.00	.00
02...	1.9	.1	3.4	126	.06	.00	.06	.00	.01	.01
02...	--	--	--	--	.04	.00	.04	.00	.18	.18
02...	--	--	--	--	.12	.00	.12	.00	.00	.00
15...	2.3	.2	3.5	126	.06	.00	.06	.00	.22	.22
15...	1.6	.3	3.3	115	.01	.00	.01	.00	.00	.00
15...	--	--	--	--	.00	.00	.00	.00	.05	.05
15...	--	--	--	--	.00	.00	.00	.00	.02	.02
28...	1.2	.1	3.0	101	.00	.00	.00	.00	3.9	3.9
28...	2.1	.1	3.6	125	.03	.01	.04	.00	3.3	3.3
28...	--	--	--	--	.00	.01	.00	.01	3.7	3.7
28...	--	--	--	--	.00	.00	.00	.00	1.2	1.2

12300110 LAKE KOOCANUSA AT INTERNATIONAL BOUNDARY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	CHLORO-PHYLL A (UG/L)	CHLORO-PHYLL B (UG/L)	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL IRON (FE) (UG/L)
OCT										
08...	.05	.03	1.3	--	--	80	10	1	1	0
08...	.05	.02	8.3	1.60	1.50	100	10	1	1	10
08...	.05	.02	1.2	1.80	1.80	--	--	--	--	--
08...	.05	.02	.8	2.40	2.70	--	--	--	--	--
29...	.04	.04	1.1	--	--	70	20	5	1	40
29...	.04	.04	1.3	--	--	80	10	3	1	0
29...	.12	.04	1.0	5.40	7.10	--	--	--	--	--
29...	.10	.05	1.6	1.00	.900	--	--	--	--	--
JUN										
25...	.03	.01	1.4	--	--	120	20	2	0	220
25...	.03	.01	2.5	.000	.000	90	20	0	0	130
25...	.03	.01	--	.000	.000	--	--	--	--	--
25...	.03	.01	1.7	.000	.000	--	--	--	--	--
JUL										
08...	.00	.00	10	--	--	100	0	1	1	150
08...	.00	.02	5.9	.000	.000	90	10	1	1	100
08...	.00	.01	2.3	8.50	4.14	--	--	--	--	--
08...	.00	.00	2.7	6.54	2.91	--	--	--	--	--
28...	.01	.05	3.2	--	--	130	10	1	0	160
28...	.01	.03	6.0	.000	.000	100	10	1	1	40
28...	.01	.02	9.6	.000	.000	--	--	--	--	--
28...	.00	.03	3.0	.000	.000	--	--	--	--	--
AUG										
10...	.04	.00	6.4	--	--	220	20	1	0	330
10...	.03	.00	1.6	.000	.000	60	10	1	0	40
10...	.00	.00	1.5	.000	.000	--	--	--	--	--
10...	.00	.00	1.5	10.2	4.55	--	--	--	--	--
SEP										
02...	.00	.01	.9	5.45	3.02	280	10	1	0	80
02...	.00	.01	.9	--	--	290	10	1	0	110
02...	.01	.02	1.0	.000	.000	--	--	--	--	--
02...	.00	.02	1.3	.799	.000	--	--	--	--	--
15...	.01	.02	1.0	--	--	150	0	1	1	150
15...	.00	.02	1.0	123	4.97	110	20	0	0	10
15...	.01	.02	3.9	2.72	.469	--	--	--	--	--
15...	.00	.00	.9	.000	.000	--	--	--	--	--
28...	.00	.00	1.6	5.62	5.37	30	0	0	0	0
28...	.01	.01	1.1	--	--	110	10	1	1	150
28...	.00	.00	4.7	2.37	.000	--	--	--	--	--
28...	.00	.00	3.1	.000	.000	--	--	--	--	--

12300110 LAKE KOOCANUSA AT INTERNATIONAL BOUNDARY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT									
08...	0	<100	0	10	10	1	0	10	10
08...	0	0	0	10	10	1	1	10	10
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
29...	0	<100	0	0	0	0	0	0	2
29...	0	0	1	0	0	2	0	0	0
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
JUN									
25...	10	2	2	10	3	1	1	10	10
25...	10	0	2	10	3	1	1	40	6
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
JUL									
08...	0	<100	2	10	0	0	0	10	0
08...	20	<100	2	10	10	0	0	10	0
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
28...	20	<100	1	0	0	0	0	0	0
28...	10	<100	2	0	0	1	0	0	0
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
AUG									
10...	10	<100	0	10	0	0	1	10	0
10...	10	<100	1	0	0	0	1	10	0
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
SEP									
02...	20	<100	0	0	0	0	0	0	0
02...	20	<100	0	10	0	0	0	10	0
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
15...	20	<100	0	20	0	1	0	10	10
15...	20	<100	0	0	0	0	0	0	10
15...	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--
28...	0	<100	0	0	10	0	0	0	0
28...	20	<100	1	20	0	0	1	10	0
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--

12300110 LAKE KOOCANUSA AT INTERNATIONAL BOUNDARY--Continued

SELECTED VERTICAL PROFILES

JUNE 25

DEPTH (FT)	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (MICROMHOS)	DISSOLVED OXYGEN (MG/L)	PH (UNITS)	TRANSMISSIBILITY (PERCENT)
0	12.4	180	9.6	8.4	--
1	12.4	180	9.6	8.4	7.9
2	12.4	180	9.6	8.4	7.9
5	12.4	180	9.6	8.4	7.9
10	12.4	180	9.6	8.4	7.9
15	12.4	180	9.6	8.4	7.3
20	12.4	175	9.6	8.4	7.3
25	12.4	175	9.6	8.4	8.5
35	12.2	175	9.6	8.4	6.3
45	12.0	170	9.6	8.4	3.4
55	11.8	170	9.7	8.4	2.3
65	11.8	170	9.7	8.4	1.7
75	10.8	165	9.8	8.4	<1.0
85	10.8	160	9.8	8.4	<1.0

SEPT. 02

DEPTH (FT)	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (MICROMHOS)	DISSOLVED OXYGEN (MG/L)	PH (UNITS)	TRANSMISSIBILITY (PERCENT)
0	17.6	190	8.8	8.4	--
1	17.6	190	8.8	8.4	37
2	17.6	190	8.8	8.4	37
5	17.5	190	8.8	8.4	37
10	17.5	190	8.8	8.4	32
15	17.4	190	8.8	8.4	30
20	17.3	190	8.6	8.4	30
25	17.2	190	8.5	8.4	27
30	17.0	190	8.3	8.4	27
35	17.0	190	8.2	8.3	30
40	16.9	190	8.0	8.3	30
50	16.5	190	8.0	8.3	24
60	16.0	190	7.9	8.2	16
70	14.9	190	8.2	8.2	11
80	14.3	190	8.3	8.2	9.8
93	14.0	195	8.5	8.2	7.3
103	14.0	195	8.4	8.2	6.8

PRIMARY PRODUCTIVITY IN THE EUPHOTIC ZONE

DATE	PRIMARY PRODUCTIVITY (MG C/M^2/DAY)
OCT.	
08...	88
29...	24
JUNE	
25...	56
JULY	
08...	110
28...	100
AUG.	
10...	120
SEPT.	
02...	160
15...	110
28...	100

(Carbon-14, light and dark bottle method)

12 01300 TOBACCO RIVER NEAR EUREKA, MT

LOCATION.--Lat 48°53'37", long 115°05'13", in NW¼SE¼SE¼ sec.9, T.36 N., R.27 W., Lincoln County, Hydrologic Unit 17010101, on right bank 0.2 mi (0.3 km) upstream from Indian Creek, 1.8 mi (2.9 km) northwest of Eureka, and 2.8 mi (4.5 km), revised, upstream from Lake Koocanusa flow line.

DRAINAGE AREA.--440 mi^2 (1,140 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,518.85 ft (767.745 m) above mean sea level.

REMARKS.--Water-discharge records good. Diversions for irrigation of about 4,500 acres (18 km^2) above station.

AVERAGE DISCHARGE.--18 years, 285 ft^3/s (8.071 m^3/s), 8.80 in/yr (224 mm/yr), 206,500 acre-ft/yr (255 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,470 ft^3/s (70.0 m^3/s) June 18, 1974, gage height, 6.86 ft (2.091 m); maximum gage height, 7.12 ft (2.170 m) May 27, 1961; minimum daily discharge, 20 ft^3/s (0.57 m^3/s) Jan. 11, 1963.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of about May 22, 1948 reached a discharge of 2,810 ft^3/s (79.6 m^3/s), from slope-area measurement of peak flow at site 1.5 mi (2.4 km) downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,160 ft^3/s (61.2 m^3/s) May 11, gage height, 6.11 ft (1.862 m); minimum, 36 ft^3/s (1.02 m^3/s) Mar. 2, gage height, 1.96 ft (0.597 m), result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	99	140	130	134	122	80	179	488	787	651	178	174
2	99	138	198	153	122	70	180	642	723	593	174	165
3	96	156	278	145	115	75	154	857	661	548	179	162
4	106	186	423	158	70	80	164	1030	625	526	178	154
5	109	198	556	155	60	90	196	1060	585	505	186	149
6	116	196	428	144	80	110	237	1130	571	480	184	149
7	131	189	319	141	120	113	299	1160	565	469	202	149
8	149	182	296	133	135	108	400	1280	587	501	222	144
9	136	174	309	144	133	107	540	1480	680	496	238	140
10	127	164	316	131	115	111	599	1600	750	442	217	135
11	129	150	294	131	113	116	692	2040	721	409	202	132
12	124	153	260	129	121	95	854	1820	675	410	192	133
13	121	145	217	120	125	110	1060	1350	652	426	182	131
14	120	147	198	125	127	104	1060	1310	619	381	181	128
15	127	150	212	135	125	100	859	1210	588	340	197	124
16	121	154	192	130	119	104	710	1070	667	328	255	121
17	119	157	175	134	115	116	607	1040	752	310	276	120
18	117	134	176	144	114	131	529	986	787	295	251	121
19	117	112	187	130	112	131	481	918	751	280	228	117
20	124	103	184	120	110	122	449	1000	719	271	229	114
21	125	115	173	120	109	113	443	941	701	268	215	111
22	128	131	163	128	109	110	415	859	691	252	204	109
23	129	133	161	145	113	114	389	869	727	237	211	106
24	125	141	164	139	117	116	375	1110	688	226	205	108
25	122	125	166	136	122	116	398	1170	677	224	200	125
26	129	128	165	127	117	117	409	985	640	211	220	125
27	124	115	167	137	113	113	388	863	597	198	214	123
28	123	108	156	132	111	112	384	1010	571	188	205	120
29	121	100	154	131	109	111	384	973	577	182	196	117
30	122	90	163	128	---	116	407	858	622	198	187	114
31	151	---	153	124	---	136	---	838	---	193	179	---
TOTAL	3786	4314	7133	4183	3273	3347	14241	33947	19968	11048	6387	3920
MEAN	122	144	230	135	113	108	475	1095	666	356	206	131
MAX	151	198	556	158	135	136	1060	2040	787	651	276	174
MIN	96	90	130	120	60	70	154	488	565	182	174	106
CFSM	.28	.33	.52	.31	.26	.25	1.08	2.49	1.51	.81	.47	.30
IN.	.32	.36	.60	.35	.28	.28	1.20	2.87	1.69	.93	.54	.33
AC-FT	7510	8560	14150	8300	6490	6640	28250	67330	39610	21910	12670	7780

CAL YR 1975 TOTAL 90324 MEAN 247 MAX 1400 MIN 50 CFSM .56 IN 7.64 AC-FT 179200
WTR YR 1976 TOTAL 115547 MEAN 316 MAX 2040 MIN 60 CFSM .72 IN 9.77 AC-FT 229200

12301300 TOBACCO RIVER NEAR EUREKA, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1971 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: December 1970 to current year.

INSTRUMENTATION.--Temperature recorder since December 8, 1970.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 22.0°C Aug. 4, 7, 1971; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 20.5°C July 26, Aug. 6; minimum, 0.0°C on many days during November to February.

WATER QUALITY DATA, OCTOBER 1975 TO JULY 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)
OCT											
01...	0900	99	277	8.2	.0	8.0	1	1	10.9	101	1.2
NOV											
20...	1130	99	289	8.3	-5.0	.5	7	1	13.3	101	.5
DEC											
23...	1300	161	230	8.3	-2.0	.0	2	4	13.1	98	.8
JAN											
20...	1400	128	281	8.1	-2.5	.0	5	1	13.4	101	.6
FEB											
18...	1130	114	279	8.5	2.0	1.0	3	2	13.0	100	--
APR											
09...	0800	531	221	8.3	9.5	3.5	25	75	11.8	98	2.6
MAY											
11...	1245	2080	143	8.2	10.0	7.0	50	250	11.1	100	1.5
21...	0900	964	175	8.3	10.0	5.5	4	25	11.6	100	1.1
JUN											
30...	1230	629	193	8.4	27.5	13.0	1	2	10.1	105	.9

DATE	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)
OCT											
01...	160	3	38	15	3.0	.1	.6	187	0	153	1.9
NOV											
20...	150	0	39	13	2.6	.1	.6	186	0	153	1.5
DEC											
23...	130	0	35	11	2.6	.1	.5	162	0	133	1.3
JAN											
20...	140	0	36	13	3.5	.1	.7	184	0	151	2.3
FEB											
18...	140	0	36	13	2.6	.1	.8	183	0	150	.9
APR											
09...	120	0	32	9.3	2.0	.1	1.2	152	0	125	1.2
MAY											
11...	83	0	22	6.8	1.0	.0	.6	103	0	84	1.0
21...	100	1	27	8.1	.9	.0	.3	122	0	100	1.0
JUN											
30...	100	0	26	8.9	1.3	.1	.3	126	0	103	.8

12301300 TOBACCO RIVER NEAR EUREKA, MT--Continued

WATER QUALITY DATA, OCTOBER 1975 TO JULY 1976

DATE	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)
OCT											
01...	5.3	.6	.1	7.8	159	.22	42.5	.02	.00	.02	.02
NOV											
20...	5.2	.0	.1	7.4	150	.20	40.1	.05	.01	.06	.02
DEC											
23...	4.3	.6	.1	7.8	138	.19	60.0	.07	.00	.07	.00
JAN											
20...	4.9	1.4	.2	7.8	153	.21	52.9	.11	.00	.11	.03
FEB											
18...	5.1	.8	.1	7.6	155	.21	47.7	.08	.00	.08	.04
APR											
09...	5.3	.8	.1	9.4	133	.18	191	.08	.00	.08	.04
MAY											
11...	2.1	.3	.1	6.6	100	.14	562	.08	.00	.08	.02
21...	2.8	.0	.0	7.3	109	.15	284	.05	.00	.05	.01
JUN											
30...	.8	1.2	.1	6.5	109	.15	185	.02	.00	.02	.01

DATE	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	CHLORO-PHYLL A (UG/L)	CHLORO-PHYLL B (UG/L)	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)
OCT											
01...	.01	.03	.02	.01	2.0	2.10	<.50	70	0	0	0
NOV											
20...	.20	.22	.01	.00	1.6	.600	.500	70	0	1	0
DEC											
23...	.17	.17	.02	.01	4.8	1.30	1.80	40	0	1	1
JAN											
20...	.19	.22	.02	.01	1.1	.800	.700	110	0	0	0
FEB											
18...	.25	.29	.02	.00	1.3	1.00	.100	40	10	0	0
APR											
09...	.73	.77	.16	.00	8.8	5.00	.000	1900	10	2	0
MAY											
11...	1.4	1.4	.26	.00	18	1.26	.000	6300	20	7	0
21...	.22	.23	.04	.00	5.3	.000	.000	440	10	0	0
JUN											
30...	.04	.05	.03	.01	1.8	.000	.000	90	10	0	0

DATE	TOTAL IRON (FE) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
01...	60	10	<100	2	10	10	1	1	10	10
NOV										
20...	120	20	<100	0	10	<0	0	2	20	10
DEC										
23...	10	10	<100	0	10	0	1	0	10	0
JAN										
20...	60	30	<100	2	30	0	0	0	--	0
FEB										
18...	20	20	<100	1	30	0	0	0	0	0
APR										
09...	3900	0	<100	2	160	0	1	0	10	0
MAY										
11...	11000	30	<100	1	430	10	0	0	40	10
21...	630	30	3	1	30	0	0	0	10	0
JUN										
30...	170	10	1	1	20	1	1	0	9	0

12301300 TOBACCO RIVER NEAR EUREKA, MT--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.5	8.0	5.5	5.0	0.5	0.0	0.0	0.0	0.0	0.0	1.0	0.5
2	11.0	8.5	5.5	5.5	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.5
3	11.0	9.5	6.5	5.5	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.5
4	11.5	10.0	7.0	6.0	1.0	0.5	0.0	0.0	0.0	0.0	0.5	0.5
5	10.0	9.0	6.5	5.5	1.0	0.5	0.0	0.0	0.0	0.0	0.5	0.5
6	10.0	10.0	5.5	5.5	0.5	0.5	0.0	0.0	0.0	0.0	0.5	0.5
7	10.0	9.0	5.5	5.0	0.5	0.5	0.0	0.0	0.0	0.0	0.5	0.5
8	9.0	8.0	5.0	3.0	1.0	0.5	0.0	0.0	0.0	0.0	0.5	0.5
9	8.5	7.0	3.0	3.0	1.5	1.0	0.0	0.0	0.0	0.0	2.0	0.5
10	8.0	7.5	3.0	2.0	1.5	1.5	0.0	0.0	0.0	0.0	2.0	2.0
11	9.0	8.0	2.0	1.0	1.5	1.0	0.0	0.0	0.0	0.0	2.0	1.5
12	9.0	8.0	2.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	1.5	0.5
13	8.5	7.0	1.5	1.0	1.0	0.5	0.0	0.0	0.5	0.0	1.0	0.5
14	7.0	6.5	3.0	1.5	0.5	0.5	0.0	0.0	0.5	0.5	1.5	1.0
15	8.5	7.0	4.0	3.0	0.5	0.0	0.0	0.0	1.0	0.5	1.5	1.0
16	7.5	6.5	3.5	2.5	0.0	0.0	0.0	0.0	1.0	0.5	3.0	1.5
17	9.0	7.5	3.0	2.5	0.0	0.0	0.5	0.0	1.0	1.0	4.0	2.5
18	8.5	8.0	2.5	1.0	0.0	0.0	0.5	0.5	1.5	0.5	4.0	3.0
19	8.0	7.5	1.0	0.5	0.0	0.0	0.5	0.0	1.5	1.0	4.0	2.0
20	7.5	7.5	0.5	0.5	0.0	0.0	0.0	0.0	1.5	1.0	3.5	2.0
21	7.5	6.5	0.5	0.5	0.0	0.0	0.0	0.0	1.5	1.0	2.0	1.5
22	6.5	5.5	0.5	0.5	0.0	0.0	0.0	0.0	2.0	1.0	3.0	2.0
23	6.0	5.5	1.0	0.5	0.0	0.0	0.0	0.0	2.0	1.0	4.0	2.0
24	6.0	5.0	1.5	1.0	0.0	0.0	0.0	0.0	2.0	1.5	3.0	2.0
25	5.0	4.5	1.0	0.0	0.5	0.0	0.0	0.0	2.0	2.0	4.0	2.5
26	5.0	4.5	0.5	0.0	1.0	0.5	0.0	0.0	2.0	1.5	4.0	2.5
27	5.5	4.5	0.5	0.0	1.0	1.0	0.0	0.0	2.0	1.5	3.5	2.0
28	5.5	4.5	0.5	0.0	1.0	0.0	0.0	0.0	1.5	1.0	4.0	2.5
29	4.5	4.5	0.0	0.0	1.0	0.5	0.0	0.0	1.5	1.0	4.5	3.0
30	5.5	4.5	0.0	0.0	1.0	1.0	0.0	0.0	---	---	6.0	4.0
31	5.5	4.5	---	---	1.0	0.0	0.0	0.0	---	---	6.0	4.0
MONTH	11.5	4.5	7.0	0.0	1.5	0.0	0.5	0.0	2.0	0.0	6.0	0.5

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	5.0	4.0	9.0	6.0	8.0	6.5	13.5	11.0	19.0	16.0	18.0	13.0
2	4.0	3.0	8.5	6.0	8.5	6.5	13.0	9.0	18.5	16.0	17.5	13.5
3	6.0	3.5	8.5	6.5	8.0	6.5	13.0	10.0	19.5	15.5	16.5	12.5
4	6.5	4.0	8.0	6.0	9.0	6.0	13.0	11.0	19.0	16.5	17.0	12.5
5	7.0	4.0	6.0	6.0	11.0	6.5	15.0	10.5	18.5	16.0	16.5	12.5
6	7.0	3.0	7.5	6.0	10.0	8.0	15.0	11.5	20.5	15.5	15.5	13.5
7	7.0	4.0	8.0	6.5	11.5	8.0	14.0	12.5	20.0	16.0	14.0	11.5
8	6.0	3.5	8.0	7.0	13.0	9.0	13.0	11.5	18.0	16.0	13.5	10.0
9	6.0	3.5	8.0	7.0	12.5	10.0	13.5	11.5	16.0	14.5	13.5	9.5
10	5.5	3.0	8.0	7.0	11.0	8.5	15.5	11.5	18.5	14.5	14.0	9.5
11	5.5	3.5	8.0	7.0	11.0	8.0	16.5	12.5	19.5	15.0	13.0	10.5
12	5.5	4.0	8.0	6.0	10.0	9.0	15.5	13.0	19.0	15.0	12.0	11.0
13	5.0	4.0	8.0	6.0	9.0	7.5	17.0	12.0	18.0	15.5	13.0	10.0
14	4.0	3.5	8.0	7.0	11.0	7.5	17.0	12.5	18.0	16.0	13.5	10.0
15	4.0	3.5	8.0	6.0	10.5	9.0	17.5	12.5	16.5	15.0	14.0	10.5
16	3.5	3.0	9.0	6.0	11.5	9.0	18.0	13.5	16.0	14.0	13.5	11.0
17	3.5	3.0	9.0	7.0	13.0	9.5	18.5	14.5	15.5	12.0	13.0	12.0
18	4.0	3.5	8.5	6.0	13.5	9.5	17.5	15.0	15.0	12.5	15.0	12.5
19	4.0	3.5	9.0	6.0	12.5	10.0	17.5	14.5	14.0	12.5	14.5	12.0
20	4.0	3.5	9.0	6.0	12.0	9.5	17.0	14.5	16.0	12.5	14.0	11.0
21	4.0	3.5	9.0	5.5	11.5	9.5	16.5	14.0	16.5	12.0	14.0	11.0
22	5.0	3.5	9.5	6.5	9.5	9.0	18.0	14.0	17.0	13.0	14.0	11.0
23	5.0	4.0	9.5	8.0	9.5	8.5	19.0	14.0	16.5	14.5	14.5	12.0
24	6.0	4.5	9.5	7.5	11.0	8.5	18.0	15.5	17.5	13.5	15.0	12.0
25	6.0	5.0	8.5	7.5	9.5	8.0	19.5	14.0	16.0	14.0	14.5	12.0
26	5.5	4.0	8.0	6.0	11.0	7.5	20.5	15.5	14.5	12.5	14.0	11.5
27	6.0	4.0	10.5	6.5	13.5	9.0	19.5	15.0	13.5	12.0	13.5	10.5
28	5.5	4.0	10.5	7.5	14.5	10.0	19.5	14.0	15.0	11.5	13.5	10.5
29	7.0	4.0	8.5	6.5	15.0	11.0	18.0	15.0	16.0	12.5	14.5	11.0
30	8.5	5.0	8.5	6.5	14.5	12.0	15.5	14.5	17.0	12.5	15.0	11.5
31	---	---	8.5	7.0	---	---	19.5	14.5	17.5	12.5	---	---
MONTH	8.5	3.0	10.5	5.5	15.0	6.0	20.5	9.0	20.5	11.5	18.0	9.5
YEAR	20.5	0.0										

12301550 PINKHAM CREEK NEAR REXFORD, MT

LOCATION.--Lat 48°49'57", long 115°13'39", in NE¼NE¼NW¼ sec.4, T.35 N., R.28 W., Lincoln County, Hydrologic Unit 17010101, Kootenai National Forest, on right bank 200 ft (60 m) upstream from road bridge, 0.9 mi (1.4 km) upstream from Lake Koocanusa flow line, and 5.5 mi (8.8 km) southwest of present site of Rexford.

DRAINAGE AREA.--75.7 mi^2 (196.1 km^2).

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,638.57 ft (804.236 m) above mean sea level (Corps of Engineers bench mark).

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 689 ft^3/s (19.5 m^3/s) May 11, 1976; maximum gage height, 4.26 ft (1.298 m) May 11, 1976; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 250 ft^3/s (7.08 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 4	1730	431	12.2	3.57	1.088	May 24	0930	278	7.87	2.97	0.905
May 11	0830	*689	19.5	*4.26	1.298						

Minimum discharge, 0.26 ft^3/s (0.007 m^3/s) Oct. 1, 3, gage height, 0.54 ft (0.165 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.29	12	10	12	12	7.0	19	75	88	30	4.1	2.9
2	.30	11	15	10	13	5.0	16	107	80	27	4.1	2.4
3	.27	23	60	14	12	4.5	15	130	70	25	4.8	2.3
4	.43	40	288	18	8.0	4.0	17	162	68	23	4.3	2.1
5	3.2	34	136	19	5.0	5.5	24	166	62	21	4.8	2.0
6	3.1	30	80	19	7.0	7.0	36	233	57	20	7.4	1.9
7	8.0	26	65	17	9.0	7.7	57	186	54	19	13	2.3
8	13	22	63	15	11	7.7	91	283	51	21	11	2.5
9	8.4	20	70	15	13	7.4	118	365	50	23	11	2.3
10	7.1	14	86	15	12	7.7	136	401	51	20	9.8	2.1
11	7.4	13	58	15	11	9.8	188	485	49	18	8.4	1.8
12	9.1	18	42	14	10	9.0	200	248	44	16	6.5	1.9
13	8.0	15	31	12	10	8.0	193	213	43	17	5.0	2.0
14	6.8	18	23	12	10	7.7	172	248	46	14	4.6	2.0
15	5.9	25	30	14	10	8.7	126	172	43	13	5.0	2.0
16	6.8	45	28	15	10	7.7	100	164	50	11	6.5	1.7
17	6.8	31	20	17	10	9.8	88	158	70	9.8	13	1.8
18	6.2	9.0	22	22	9.8	13	71	136	58	8.4	9.1	3.7
19	7.1	5.5	28	20	9.1	12	67	126	50	7.4	6.8	3.0
20	8.7	4.5	31	17	9.1	11	62	144	46	5.9	6.2	2.9
21	10	4.0	28	14	9.1	9.8	62	132	42	5.3	5.9	2.3
22	9.1	4.5	25	15	8.4	9.8	58	116	45	4.8	5.0	1.9
23	8.7	5.0	25	18	9.1	11	56	134	49	4.8	4.8	1.8
24	7.7	5.5	26	13	9.1	11	56	208	43	4.6	4.6	1.9
25	7.1	5.0	26	14	9.1	10	71	174	43	4.5	4.6	1.8
26	7.4	4.6	26	14	9.1	11	65	134	47	4.1	5.3	1.9
27	7.4	4.4	26	15	8.7	9.8	63	114	43	3.6	5.3	2.0
28	7.4	4.2	22	15	8.7	9.8	63	122	39	3.6	4.6	1.9
29	7.4	4.0	21	15	7.7	9.4	62	105	34	3.4	4.1	1.7
30	7.7	3.8	22	14	---	11	60	96	31	3.9	3.9	1.6
31	12	---	22	14	---	13	---	91	---	4.5	3.2	---
TOTAL	208.79	461.0	1455	473	280.0	275.8	2412	5628	1546	396.6	196.7	65.0
MEAN	6.74	15.4	46.9	15.3	9.66	8.90	80.4	182	51.5	12.8	6.35	2.17
MAX	13	45	288	22	13	13	200	485	88	30	13	3.7
MIN	.27	3.8	10	10	5.0	4.0	15	75	31	3.4	3.2	1.6
CFSM	.09	.20	.62	.20	.13	.12	1.06	2.40	.68	.17	.08	.03
IN.	.10	.23	.71	.23	.14	.14	1.19	2.77	.76	.19	.10	.03
AC-FT	414	914	2890	938	555	547	4780	11160	3070	787	390	129

CAL YR 1975 TOTAL 11819.30 MEAN 32.4 MAX 377 MIN 0 CFSM .43 IN 5.81 AC-FT 23440
WTR YR 1976 TOTAL 13397.89 MEAN 36.6 MAX 485 MIN .27 CFSM .48 IN 6.58 AC-FT 26570

12301600 LAKE KOOCANUSA BELOW PINKHAM CREEK, NEAR REXFORD, MT

LOCATION.--Lat 48°49'37", long 115°15'58", in E½SW¼NE¼ sec.6, T.35 N., R.28 W., Lincoln County, Hydrologic Unit 17010101, in middle of old channel 0.6 mi (1.0 km) downstream from Pinkham Creek, and 6.5 mi (10.5 km) northeast of Rexford.

PERIOD OF RECORD.--Water years 1972 to July 1976 (discontinued).

REMARKS.--Additional vertical profiles for temperatures, specific conductance, dissolved oxygen, pH, transmissibility, and natural light penetration are available in files in Helena district office.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	DISSOLVED OXYGEN (MG/L)	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT										
07...	1100	190	210	8.2	10.0	4	7.0	.6	100	12
07...	1130	10	225	8.2	14.4	4	9.0	1.2	100	12
07...	1145	30	225	8.2	14.4	--	8.9	--	--	--
07...	1200	1.0	225	8.2	14.4	--	9.0	--	--	--
30...	1015	184	240	8.3	11.0	2	7.8	.6	120	17
30...	1030	10	235	8.2	11.3	5	8.7	.7	120	22
30...	1045	25	235	8.2	11.3	--	8.6	--	--	--
30...	1100	1.0	235	8.2	11.3	--	8.7	--	--	--
DEC										
08...	1100	1.0	225	8.2	7.0	7	10.8	1.0	120	21
23...	1000	1.0	231	8.3	5.5	1	10.9	.4	120	23
JAN										
06...	1100	1.0	248	8.3	3.0	4	12.0	1.0	130	20
20...	1030	1.0	252	8.0	2.0	4	12.0	.6	120	17
FEB										
03...	1030	1.0	280	8.2	1.0	6	11.7	1.0	140	18
MAR										
19...	1100	1.0	350	8.3	2.5	10	11.6	1.4	170	32
31...	1030	1.0	330	8.3	3.0	7	11.6	1.4	170	27
MAY										
05...	1130	56	268	8.3	7.2	5	10.8	.6	140	22
05...	1230	10	287	8.4	8.4	0	10.6	.7	140	22
05...	1300	5.0	235	8.4	8.4	--	10.6	--	--	--
05...	1330	1.0	235	8.4	8.4	--	10.6	--	--	--
26...	1115	119	165	8.2	8.0	2	10.9	.7	100	8
26...	1145	10	170	8.2	9.6	3	10.1	1.4	100	10
26...	1300	5.0	170	8.2	9.7	--	10.1	--	--	--
26...	1315	1.0	170	8.2	9.7	--	10.1	--	--	--
JUN										
24...	1030	185	200	8.1	7.0	1	9.8	.5	120	16
24...	1100	10	180	8.4	11.1	1	10.0	.9	100	13
24...	1130	18	180	8.4	11.0	--	10.0	--	--	--
24...	1200	1.0	180	8.4	11.1	--	10.0	--	--	--
JUL										
07...	1130	198	246	8.3	7.0	7	9.2	1.0	130	20
07...	1200	10	175	8.7	13.6	4	10.8	1.8	100	9
07...	1230	15	180	8.7	13.0	--	10.8	--	--	--
07...	1300	1.0	185	8.8	15.6	--	10.8	--	--	--

12301600 LAKE KOOCANUSA BELOW PINKHAM CREEK, NEAR REXFORD, MT--Continued

WATER QUALITY DATA, OCTOBER 1975 TO JULY 1976

DATE	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	SODIUM AD-SORP-TION RATIO	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)
OCT										
07...	29	6.9	1.3	.1	.4	108	0	89	1.1	12
07...	29	7.2	1.4	.1	.4	110	0	90	1.1	15
07...	--	--	--	--	--	--	--	85	--	--
07...	--	--	--	--	--	--	--	86	--	--
30...	32	9.0	2.0	.1	.3	122	0	100	1.0	18
30...	32	9.1	2.1	.1	.3	116	0	95	1.2	16
30...	--	--	--	--	--	--	--	92	--	--
30...	--	--	--	--	--	--	--	92	--	--
DEC										
08...	33	8.6	1.8	.1	.6	118	0	97	1.2	20
23...	33	8.8	2.1	.1	.5	117	0	96	.9	19
JAN										
06...	36	8.8	2.3	.1	.8	130	0	107	1.0	26
20...	33	10	3.3	.1	.6	130	0	107	2.1	23
FEB										
03...	38	10	3.1	.1	.7	144	0	118	1.5	26
MAR										
19...	45	15	5.0	.2	.9	173	0	142	1.4	41
31...	44	14	5.8	.2	.8	171	0	140	1.4	34
MAY										
05...	36	12	2.9	.1	.6	143	0	117	1.1	24
05...	38	12	2.8	.1	.6	149	0	122	.9	25
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
26...	29	7.8	1.2	.1	.3	118	0	97	1.2	12
26...	28	7.3	1.3	.1	.4	110	0	90	1.1	11
26...	--	--	--	--	--	--	--	87	--	--
26...	--	--	--	--	--	--	--	87	--	--
JUN										
24...	32	9.5	2.2	.1	.6	126	0	103	1.6	17
24...	28	7.8	1.4	.1	.5	108	0	89	.7	10
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
JUL										
07...	35	10	2.6	.1	.6	132	0	108	1.1	24
07...	28	7.4	1.6	.1	.5	112	0	92	.4	15
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--

12301600 LAKE KOOCANUSA BELOW PINKHAM CREEK, NEAR REXFORD, MT--Continued

WATER QUALITY DATA, OCTOBER 1975 TO JULY 1976

DATE	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)
OCT										
07...	.9	.3	4.3	111	.13	.00	.13	.00	.08	.08
07...	1.5	.3	3.7	114	.01	.00	.01	.00	.15	.15
07...	--	--	--	--	.00	.00	.00	.02	.12	.14
07...	--	--	--	--	.01	.00	.01	.00	.08	.08
30...	1.6	.3	3.4	127	.06	.01	.07	.00	.28	.28
30...	1.3	.3	3.3	122	.04	.01	.05	.04	.18	.22
30...	--	--	--	--	.04	.01	.05	.00	.17	.17
30...	--	--	--	--	.04	.01	.05	.02	.20	.22
DEC										
08...	1.1	.4	3.9	133	.08	.00	.08	.03	.01	.04
23...	1.5	.3	3.5	119	.06	.00	.06	.00	.10	.10
JAN										
06...	1.5	.3	3.8	135	.10	.00	.10	.04	.20	.24
20...	2.4	.4	3.9	135	.17	.00	.17	.03	.18	.21
FEB										
03...	2.8	.3	4.8	158	.18	.00	.18	.00	.22	.22
MAR										
19...	4.0	.3	5.8	191	.19	.00	.19	.04	.18	.22
31...	4.4	.3	5.8	201	.20	.00	.20	.02	.03	.05
MAY										
05...	2.2	.3	5.6	161	.14	.00	.14	.01	.14	.15
05...	2.3	.2	5.2	165	.13	.00	.13	.00	.03	.03
05...	--	--	--	--	.13	.00	.13	.00	.00	.00
05...	--	--	--	--	.13	.00	.13	.00	.00	.00
26...	1.6	.1	5.1	128	.13	.01	.14	.02	.13	.15
26...	1.8	.1	5.4	133	.14	.01	.15	.02	.16	.18
26...	--	--	--	--	.14	.01	.15	.01	.12	.13
26...	--	--	--	--	.13	.01	.14	.01	.24	.25
JUN										
24...	2.6	.2	5.8	142	.15	.01	.16	.00	.13	.13
24...	1.7	.1	5.3	122	.07	.01	.08	.01	.04	.05
24...	--	--	--	--	.08	.01	.09	.00	.10	.10
24...	--	--	--	--	.08	.01	.09	.00	.08	.08
JUL										
07...	2.7	.2	5.4	155	.20	.00	.20	.00	.08	.08
07...	1.4	.2	3.3	119	.00	.00	.00	.00	.02	.02
07...	--	--	--	--	.00	.00	.00	.00	.07	.07
07...	--	--	--	--	.00	.00	.00	.00	.07	.07

12301600 LAKE KOOCANUSA BELOW PINKHAM CREEK, NEAR REXFORD, MT--Continued

WATER QUALITY DATA, OCTOBER 1975 TO JULY 1976

DATE	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	CHLORO-PHYLL A (UG/L)	CHLORO-PHYLL B (UG/L)	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL IRON (FE) (UG/L)
OCT										
07...	.07	.04	5.0	--	--	260	10	1	1	280
07...	.03	.02	5.0	1.80	1.80	60	20	1	1	0
07...	.05	.01	2.0	2.30	2.80	--	--	--	--	--
07...	.04	.01	4.1	2.20	2.20	--	--	--	--	--
30...	.06	.03	2.1	--	--	130	10	2	2	100
30...	.05	.02	9.3	2.50	3.70	70	10	3	3	0
30...	.07	.02	1.4	7.50	12.0	--	--	--	--	--
30...	.05	.02	1.9	.000	.000	--	--	--	--	--
DEC										
08...	.05	.04	9.0	1.70	1.40	120	20	1	0	150
23...	.05	.03	5.7	2.80	2.20	110	10	1	1	100
JAN										
06...	.06	.02	3.2	3.60	5.30	210	0	1	1	230
20...	.04	.03	1.6	1.20	.800	120	0	0	0	120
FEB										
03...	.04	.01	4.8	--	--	110	0	1	1	190
MAR										
19...	.06	.00	1.5	1.70	.000	280	0	1	1	620
31...	.05	.00	2.0	.700	.500	240	0	0	0	480
MAY										
05...	.03	.01	3.0	--	--	360	10	1	0	620
05...	.03	.00	2.7	1.89	.278	240	20	1	0	410
05...	.03	.00	4.9	.000	.000	--	--	--	--	--
05...	.03	.00	3.1	.000	.000	--	--	--	--	--
26...	.05	.01	3.3	--	--	420	30	0	0	810
26...	.04	.01	8.8	.000	.000	200	30	0	0	320
26...	.04	.01	2.4	.000	.000	--	--	--	--	--
26...	.04	.01	4.9	.000	.000	--	--	--	--	--
JUN										
24...	.06	.01	2.3	--	--	120	20	0	0	200
24...	.04	.01	3.3	.000	.000	90	20	0	0	130
24...	.03	.01	2.2	.000	.000	--	--	--	--	--
24...	.03	.00	1.6	.000	.000	--	--	--	--	--
JUL										
07...	.01	.03	4.1	--	--	110	20	1	1	180
07...	.02	.00	2.3	2.22	.000	80	10	1	1	80
07...	.00	.03	2.6	4.41	.000	--	--	--	--	--
07...	.00	.02	1.7	.000	.000	--	--	--	--	--

12301600 LAKE KOOCANUSA BELOW PINKHAM CREEK, NEAR REXFORD, MT--Continued

WATER QUALITY DATA, OCTOBER 1975 TO JULY 1976

DATE	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT									
07...	10	<100	1	10	10	1	0	10	10
07...	0	0	1	10	10	1	0	10	10
07...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
30...	0	<100	1	0	0	2	2	0	4
30...	0	<100	2	0	10	2	2	1	10
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
DEC									
08...	0	<100	1	20	0	1	0	0	0
23...	0	<100	1	20	0	1	0	0	0
JAN									
06...	0	<100	0	30	20	2	2	30	0
20...	20	<100	2	30	20	0	0	--	0
FEB									
03...	20	<100	1	60	50	0	0	20	10
MAR									
19...	40	<100	2	140	120	1	1	20	0
31...	10	<100	1	120	120	1	1	10	10
MAY									
05...	20	<100	1	40	10	1	0	30	10
05...	0	<100	0	40	10	1	0	50	10
05...	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--
26...	40	3	1	20	10	0	0	10	10
26...	30	1	1	10	0	0	0	0	10
26...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
JUN									
24...	10	1	1	10	1	1	1	20	10
24...	10	1	1	7	1	1	1	10	8
24...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
JUL									
07...	20	<100	2	20	10	0	0	0	0
07...	40	<100	2	0	0	1	0	0	10
07...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--

12301600 LAKE KOOCANUSA BELOW PINKHAM CREEK, NEAR REXFORD, MT--Continued

SELECTED VERTICAL PROFILES

MAY 05

DEPTH (FT)	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (MICROMHOS)	DISSOLVED OXYGEN (MG/L)	PH (UNITS)	TRANSMISSIBILITY (PERCENT)
0	8.4	235	10.6	8.4	--
1	8.4	235	10.6	8.4	<1.0
2	8.4	235	10.6	8.4	<1.0
5	8.4	235	10.6	8.4	<1.0
10	8.4	235	10.6	8.4	<1.0
15	8.4	235	10.6	8.4	<1.0
20	8.0	230	10.7	8.4	<1.0
25	7.9	225	10.7	8.3	<1.0
30	7.8	225	10.7	8.3	<1.0
40	7.5	225	10.7	8.3	<1.0
50	7.3	225	10.8	8.3	<1.0
56	7.2	220	10.8	8.3	<1.0
66	7.2	220	10.8	8.3	<1.0

JULY 07

DEPTH (FT)	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (MICROMHOS)	DISSOLVED OXYGEN (MG/L)	PH (UNITS)	TRANSMISSIBILITY (PERCENT)
0	15.8	185	10.8	8.8	--
1	15.6	185	10.8	8.8	18
2	15.5	175	10.8	8.8	18
5	14.5	175	10.8	8.8	18
10	13.6	175	10.8	8.7	11
15	13.0	180	10.8	8.7	11
20	12.9	180	10.7	8.6	11
25	12.8	180	10.6	8.6	17
30	12.5	180	10.6	8.6	15
40	11.9	175	10.5	8.5	15
50	11.4	170	10.3	8.5	17
60	10.9	165	10.2	8.5	9.8
70	10.2	160	9.9	8.5	5.3
80	9.9	160	9.9	8.5	3.1
90	9.7	165	9.8	8.5	2.1
100	9.3	165	9.8	8.4	1.9
110	9.1	170	9.7	8.4	2.1
125	9.0	170	9.6	8.4	1.9
140	8.8	170	9.6	8.4	1.7
155	8.5	170	9.6	8.4	1.5
170	7.6	190	9.3	8.4	1.1
185	7.3	190	9.3	8.3	1.2
198	7.0	200	9.2	8.3	1.7
208	6.9	205	9.2	8.3	1.9

PRIMARY PRODUCTIVITY IN THE EUPHOTIC ZONE

DATE	PRIMARY PRODUCTIVITY (MG C/M^2/DAY)
OCT.	
07...	65
30...	24
MAY	
05...	36
26...	18
JUNE	
24...	70
JULY	
07...	270

(Carbon-14, light and dark bottle method)

12301810 BIG CREEK NEAR REXFORD, MT

LOCATION.--Lat 48°44'53", long 115°21'09", in SE¼SW¼SE¼ sec.33, T.35 N., R.29 W., Lincoln County, Hydrologic Unit 17010101, Kootenai National Forest, on left bank 500 ft (150 m) downstream from highway bridge, 0.3 mi (0.5 km) upstream from Lake Koocanusa flow line, and 13.6 mi (21.9 km) southwest of present site of Rexford.

DRAINAGE AREA.--139 mi^2 (360 km^2).

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,500.43 ft (762.131 m) above mean sea level (Corps of Engineers bench mark).

REMARKS.--Records fair except those for winter period, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,680 ft^3/s (75.9 m^3/s) May 11, 1976; maximum gage height, 6.78 ft (2.067 m) May 11, 1976; minimum daily dischhargе, 5.0 ft (0.14 m^3/s) Dec. 9, 1972.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft^3/s (28.32 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 11	0500	*2680	75.9	6.78	2.067	May 14	0300	1520	43.0	5.62	1.713

Minimum discharge, 12 ft^3/s (0.34 m^3/s) Oct. 3, gage height 1.56 ft (0.475 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	31	60	70	59	47	67	472	372	116	35	39
2	13	31	150	72	58	40	70	645	340	110	36	36
3	12	43	260	76	56	41	67	750	305	102	35	35
4	17	55	575	80	54	42	75	760	287	96	34	34
5	18	53	388	86	50	43	105	792	200	90	41	31
6	18	47	236	84	44	45	156	822	239	84	43	29
7	25	47	188	82	45	47	221	990	239	80	50	29
8	27	44	164	78	48	50	317	1490	239	87	52	29
9	24	42	184	78	50	50	416	1660	242	89	52	29
10	23	39	203	82	57	50	448	1830	239	75	47	28
11	24	37	180	84	53	51	545	2020	221	70	43	24
12	24	38	168	82	54	48	680	1490	200	68	40	24
13	23	36	142	76	54	47	695	1300	198	71	37	24
14	22	36	140	72	55	45	595	1380	186	66	36	23
15	22	47	155	64	54	42	485	918	172	60	36	22
16	22	65	160	60	52	45	416	816	200	56	40	21
17	21	56	155	63	52	47	364	822	340	53	43	23
18	21	45	150	70	52	51	328	760	290	51	39	27
19	22	43	145	69	51	53	293	700	233	48	36	25
20	25	42	140	66	50	52	278	750	206	49	39	23
21	25	40	135	64	49	51	266	685	192	48	38	22
22	25	41	130	64	49	50	245	630	190	46	36	21
23	24	43	125	60	49	52	233	665	180	43	44	20
24	24	44	119	56	49	51	230	715	194	41	46	20
25	23	42	89	62	49	50	251	685	174	40	44	20
26	25	41	83	65	49	49	242	590	166	39	54	20
27	24	40	77	67	48	49	239	525	152	36	52	19
28	24	39	71	64	48	49	251	535	138	35	48	18
29	24	38	70	64	50	49	260	472	128	33	45	18
30	26	38	77	62	---	49	344	424	120	35	44	18
31	31	---	72	60	---	52	---	400	---	37	41	---
TOTAL	691	1283	4991	2182	1468	1487	9182	27493	6612	1954	1306	749
MEAN	22.3	42.8	161	70.4	51.3	48.0	306	887	220	63.0	42.1	25.0
MAX	31	65	575	86	59	53	695	2020	372	116	54	39
MIN	12	31	60	56	44	40	67	400	120	33	34	18
CFSM	.16	.31	1.16	.51	.37	.35	2.20	6.38	1.58	.45	.30	.18
IN.	.18	.34	1.34	.58	.40	.40	2.46	7.36	1.77	.52	.35	.20
AC-FT	1370	2540	9900	4330	2950	2950	18210	54530	13110	3880	2590	1490

CAL YR 1975 TOTAL 57271.0 MEAN 157 MAX 1640 MIN 7.0 CFSM 1.13 IN 15.33 AC-FT 113600
WTR YR 1976 TOTAL 59418.0 MEAN 162 MAX 2020 MIN 12 CFSM 1.17 IN 15.90 AC-FT 117900

12301830 LAKE KOOCANUSA AT TENMILE CREEK, NEAR LIBBY, MT

LOCATION.--Lat 48°35'06", long 115°13'52", in NW¼NE¼NW¼ sec.33, T.33 N., R.28 W., Lincoln County, Hydrologic Unit 17010101, in middle of old channel at Tenmile Creek, and 20.1 mi (32.3 km) northeast of Libby.

PERIOD OF RECORD.--Water years 1972 to current year.

REMARKS.--Additional vertical profiles for temperature, specific conductance, dissolved oxygen, pH, transmissibility, and natural light penetration are available in files in Helena district office.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	DISSOLVED OXYGEN (MG/L)	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT										
06...	1130	245	225	8.1	8.8	7	5.2	.7	110	18
06...	1200	10	220	8.2	15.0	5	8.8	.7	100	12
06...	1300	30	215	8.2	14.8	--	7.4	--	--	--
06...	1315	1.0	220	8.2	15.0	--	8.4	--	--	--
28...	1200	232	220	8.3	9.2	5	6.9	.4	110	14
28...	1215	10	220	8.2	12.0	5	8.9	1.5	110	15
28...	1230	30	215	8.2	12.0	--	8.8	--	--	--
28...	1245	1.0	220	8.2	12.0	--	8.9	--	--	--
APR										
12...	1300	105	323	8.3	3.2	6	11.2	2.3	160	22
12...	1330	10	306	8.4	4.0	4	12.0	4.4	150	25
12...	1400	15	235	8.4	4.0	--	12.0	--	--	--
12...	1430	2.0	235	8.4	4.0	--	12.0	--	--	--
MAY										
04...	1130	127	315	8.1	4.5	6	11.0	.8	150	19
04...	1230	10	282	8.2	7.3	9	10.7	1.0	140	21
04...	1300	5.0	225	8.2	7.5	--	10.7	--	--	--
04...	1330	1.0	225	8.2	7.6	--	10.8	--	--	--
24...	1200	175	225	7.8	4.8	2	11.2	.8	150	31
24...	1230	10	200	8.1	11.4	3	10.0	1.2	120	24
24...	1245	20	190	8.1	10.0	--	10.2	--	--	--
24...	1300	5.0	200	8.1	12.0	--	9.9	--	--	--
JUN										
03...	1100	187	235	8.0	4.8	2	10.4	.5	150	25
03...	1130	10	200	8.4	11.0	3	10.7	1.0	110	14
03...	1300	5.0	200	8.4	11.2	--	10.7	--	--	--
03...	1330	1.0	195	8.4	11.8	--	10.7	--	--	--
21...	1130	225	235	8.0	5.0	1	9.8	3.8	150	18
21...	1230	10	190	8.4	13.2	1	10.0	2.8	110	13
21...	1300	15	185	8.4	12.8	--	10.0	--	--	--
21...	1330	1.0	190	8.4	13.2	--	10.0	--	--	--
JUL										
06...	1130	250	225	8.2	5.1	3	9.4	.5	140	19
06...	1200	10	185	8.8	15.8	4	10.3	1.1	100	10
06...	1300	25	185	8.6	13.4	--	10.3	--	--	--
06...	1330	2.0	185	8.8	16.0	--	10.3	--	--	--
29...	1230	245	235	8.0	6.5	18	8.5	.8	140	28
29...	1300	10	195	8.7	18.2	12	9.4	.7	100	13
29...	1330	30	185	8.5	15.3	--	9.2	--	--	--
29...	1400	1.0	195	8.7	18.4	--	9.2	--	--	--
AUG										
09...	1200	248	220	8.0	7.2	18	8.2	2.2	130	25
09...	1230	10	185	8.6	17.9	8	9.1	1.3	100	16
09...	1300	40	185	8.4	15.3	--	8.7	--	--	--
09...	1330	1.0	185	8.6	17.9	--	9.0	--	--	--
30...	1230	245	200	8.0	8.8	3	8.2	.5	120	24
30...	1300	10	185	8.7	18.0	3	9.0	.5	100	20
30...	1330	40	185	8.5	16.6	--	8.6	--	--	--
30...	1400	1.0	190	8.7	18.6	--	9.2	--	--	--
SEP										
14...	1030	245	190	8.0	8.8	5	7.3	.6	110	19
14...	1230	10	185	8.6	16.4	2	9.0	.4	100	19
14...	1300	40	185	8.4	15.8	--	8.2	--	--	--
14...	1330	1.0	185	8.6	16.8	--	9.0	--	--	--
27...	1030	10	190	8.5	16.9	2	9.7	.5	100	11
27...	1100	245	190	7.9	9.0	3	7.9	.9	110	20
27...	1300	40	190	8.5	16.5	--	10.0	--	--	--
27...	1330	1.0	190	8.5	17.2	--	9.6	--	--	--

12301830 LAKE KOOCANUSA AT TENMILE CREEK, NEAR LIBBY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	SODIUM AD-SORP-TION RATIO	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)
OCT										
06...	32	7.8	1.9	.1	.6	115	0	94	1.5	16
06...	28	7.2	1.6	.1	.5	107	0	88	1.1	15
06...	--	--	--	--	--	--	--	83	--	--
06...	--	--	--	--	--	--	--	86	--	--
28...	30	7.3	1.8	.1	.5	111	0	91	.9	14
28...	30	7.4	1.8	.1	.4	110	0	90	1.1	15
28...	--	--	--	--	--	--	--	88	--	--
28...	--	--	--	--	--	--	--	87	--	--
APR										
12...	42	13	4.5	.2	.8	166	0	136	1.3	33
12...	41	12	3.5	.1	.8	155	0	127	1.0	31
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
MAY										
04...	40	12	4.3	.2	.8	159	0	130	2.0	30
04...	37	11	3.8	.1	.7	142	0	116	1.4	27
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
24...	43	11	3.5	.1	.7	148	0	121	3.8	29
24...	35	9.0	2.3	.1	.6	122	0	100	1.6	20
24...	--	--	--	--	--	--	--	97	--	--
24...	--	--	--	--	--	--	--	98	--	--
JUN										
03...	39	12	3.4	.1	.6	149	0	122	2.4	18
03...	30	9.3	2.0	.1	.4	121	0	99	.8	6.7
03...	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--
21...	40	12	2.4	.1	.8	160	0	131	2.6	27
21...	30	8.1	1.6	.1	.5	116	0	95	.7	15
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
JUL										
06...	39	11	3.8	.1	.8	151	0	124	1.5	29
06...	29	7.8	1.8	.1	.5	115	0	94	.3	18
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
29...	39	11	3.1	.1	.7	140	0	115	2.2	24
29...	29	7.6	1.5	.1	.5	110	0	90	.4	14
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
AUG										
09...	37	9.8	2.7	.1	.6	131	0	107	2.1	21
09...	29	7.7	1.6	.1	.4	107	0	88	.4	13
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
30...	32	9.1	2.1	.1	.5	114	0	94	1.8	16
30...	29	7.6	1.7	.1	.4	102	0	84	.3	13
30...	--	--	--	--	--	--	--	85	--	--
30...	--	--	--	--	--	--	--	86	--	--
SEP										
14...	31	8.2	1.8	.1	.5	112	0	92	1.8	15
14...	28	7.5	1.5	.1	.4	98	1	82	.4	14
14...	--	--	--	--	--	--	--	83	--	--
14...	--	--	--	--	--	--	--	78	--	--
27...	28	7.4	1.6	.1	.4	109	0	89	.6	13
27...	29	7.9	1.5	.1	.4	104	0	85	2.1	13
27...	--	--	--	--	--	--	--	90	--	--
27...	--	--	--	--	--	--	--	90	--	--

12301830 LAKE KOOCANUSA AT TENMILE CREEK, NEAR LIBBY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)
OCT										
06...	1.6	.4	4.8	125	.13	.00	.13	.02	.06	.08
06...	1.4	.3	3.6	114	.01	.00	.01	.02	.06	.08
06...	--	--	--	--	.00	.00	.00	.01	.10	.11
06...	--	--	--	--	.00	.00	.00	.01	.02	.03
28...	1.3	.3	4.4	125	.12	.00	.12	.01	.16	.17
28...	1.3	.3	3.6	122	.03	.00	.03	.01	.16	.17
28...	--	--	--	--	.02	.01	.03	.02	.12	.14
28...	--	--	--	--	.02	.00	.02	.03	.18	.21
APR										
12...	4.3	.3	6.0	189	.19	.01	.20	.00	.03	.03
12...	3.6	.3	5.7	175	.18	.01	.19	.02	.11	.13
12...	--	--	--	--	.18	.01	.19	.03	--	--
12...	--	--	--	--	.17	.01	.18	.03	.00	.03
MAY										
04...	3.8	.3	5.7	168	.18	.00	.18	.01	.03	.04
04...	3.2	.2	5.6	157	.15	.01	.16	.01	.13	.14
04...	--	--	--	--	.17	.00	.17	.01	.29	.30
04...	--	--	--	--	.17	.00	.17	.01	.04	.05
24...	4.0	.3	6.1	155	.16	.01	.17	.02	.11	.13
24...	2.4	.2	5.9	123	.07	.03	.10	.03	.15	.18
24...	--	--	--	--	.10	.03	.13	.02	.11	.13
24...	--	--	--	--	.08	.04	.12	.04	.09	.13
JUN										
03...	2.7	.2	6.5	202	.16	.01	.17	.00	.18	.18
03...	1.5	.2	5.8	139	.04	.01	.05	.03	.25	.28
03...	--	--	--	--	.02	.01	.03	.03	.25	.28
03...	--	--	--	--	.01	.01	.02	.03	.30	.33
21...	2.9	.2	6.5	185	.19	.01	.20	.01	.22	.23
21...	1.3	.2	5.4	131	.06	.01	.07	.04	.14	.18
21...	--	--	--	--	.08	.01	.09	.04	.11	.15
21...	--	--	--	--	.06	.01	.07	.02	.11	.13
JUL										
06...	3.6	.3	5.8	182	.21	.00	.21	.00	.05	.05
06...	1.6	.2	4.2	123	.00	.00	.00	.00	.06	.06
06...	--	--	--	--	.06	.00	.06	.00	.11	.11
06...	--	--	--	--	.00	.00	.00	.00	.09	.09
29...	2.9	.2	6.1	148	.22	.00	.22	.00	.45	.45
29...	1.3	.1	3.1	100	.00	.00	.00	.00	.11	.11
29...	--	--	--	--	.00	.00	.00	.00	.12	.12
29...	--	--	--	--	.00	.00	.00	.00	.16	.16
AUG										
09...	2.4	.2	5.4	148	.22	.00	.22	.00	.00	.00
09...	1.4	.2	2.8	114	.02	.00	.02	.00	.00	.00
09...	--	--	--	--	.01	.00	.01	.01	.12	.13
09...	--	--	--	--	.01	.00	.01	.00	.00	.00
30...	2.0	.2	4.8	135	.21	.00	.21	.00	.00	.00
30...	1.5	.1	2.9	116	.01	.00	.01	.00	.00	.00
30...	--	--	--	--	.02	.00	.02	.00	.00	.00
30...	--	--	--	--	.01	.00	.01	.00	.00	.00
SEP										
14...	1.9	.2	5.0	139	.17	.00	.17	.00	.00	.00
14...	1.4	.1	3.2	120	.00	.00	.00	.00	.08	.08
14...	--	--	--	--	.00	.00	.00	.00	.02	.02
14...	--	--	--	--	.00	.00	.00	.00	.00	.00
27...	.9	.1	3.2	107	.01	.00	.01	.00	.77	.77
27...	.9	.2	4.4	113	.18	.00	.18	.00	.24	.24
27...	--	--	--	--	.03	.01	.04	.00	2.4	2.4
27...	--	--	--	--	.00	.00	.00	.00	2.1	2.1

12301830 LAKE KOOCANUSA AT TENMILE CREEK, NEAR LIBBY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	CHLORO-PHYLL A (UG/L)	CHLORO-PHYLL B (UG/L)	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL IRON (FE) (UG/L)
OCT										
06...	.07	.03	3.4	--	--	290	20	1	1	310
06...	.03	.01	3.6	2.50	3.00	60	20	8	1	0
06...	.03	.01	2.0	2.50	3.10	--	--	--	--	--
06...	.03	.01	2.5	1.80	1.80	--	--	--	--	--
28...	.08	.04	2.1	--	--	150	20	1	1	150
28...	.06	.02	1.6	.500	.100	60	40	1	0	0
28...	.05	.02	1.4	--	--	--	--	--	--	--
28...	.05	.02	.9	.800	.700	--	--	--	--	--
APR										
12...	.03	.01	2.0	--	--	90	10	1	1	240
12...	.03	.01	1.6	.000	.000	90	10	1	1	160
12...	.04	.01	3.3	3.10	.000	--	--	--	--	--
12...	.05	.01	2.0	.000	.000	--	--	--	--	--
MAY										
04...	.05	.00	2.8	--	--	170	0	1	1	230
04...	.07	.01	2.8	.000	.000	260	10	1	0	390
04...	.09	.01	1.5	1.51	.000	--	--	--	--	--
04...	.04	.01	--	1.47	.107	--	--	--	--	--
24...	.04	.02	1.6	--	--	60	10	0	0	140
24...	.02	.01	2.5	.000	.000	60	30	0	0	90
24...	.03	.01	2.2	.000	.000	--	--	--	--	--
24...	.02	.01	6.9	.000	.000	--	--	--	--	--
JUN										
03...	.04	.02	1.9	--	--	20	20	0	0	110
03...	.02	.00	4.1	.000	.000	30	30	0	0	100
03...	.02	.00	7.9	.000	.000	--	--	--	--	--
03...	.02	.00	2.8	.361	.000	--	--	--	--	--
21...	.04	.01	2.1	--	--	50	10	0	0	130
21...	.02	.01	3.2	.000	.000	60	10	0	0	80
21...	.02	.01	2.0	.000	.000	--	--	--	--	--
21...	.02	.01	1.9	.000	.000	--	--	--	--	--
JUL										
06...	.05	.01	11	--	--	60	20	1	1	90
06...	.01	.00	2.5	.000	.000	70	20	1	1	60
06...	.01	.01	8.1	2.17	.000	--	--	--	--	--
06...	.01	.00	2.9	.000	.000	--	--	--	--	--
29...	.04	.01	1.7	--	--	60	10	1	1	100
29...	.01	.00	2.0	.000	.000	40	20	0	1	60
29...	.01	.00	1.9	.000	.000	--	--	--	--	--
29...	.01	.00	2.1	.000	.000	--	--	--	--	--
AUG										
09...	.05	.01	17	--	--	80	0	0	0	90
09...	.01	.00	3.3	4.11	.605	60	10	0	0	10
09...	.02	.01	3.6	.000	.000	--	--	--	--	--
09...	.00	.01	1.8	6.83	6.11	--	--	--	--	--
30...	.01	.03	1.6	--	--	70	20	0	0	120
30...	.00	.00	1.9	1.10	.000	50	20	1	1	130
30...	.00	.01	5.6	.000	.000	--	--	--	--	--
30...	.00	.00	1.7	1.11	.000	--	--	--	--	--
SEP										
14...	.01	.01	1.5	--	--	160	10	1	1	120
14...	.00	.01	1.4	1.86	.500	150	10	0	0	10
14...	.00	.01	4.9	1.57	.248	--	--	--	--	--
14...	.00	.01	1.7	3.21	1.43	--	--	--	--	--
27...	.00	.00	1.5	1.83	.815	40	10	0	1	10
27...	.01	.01	1.5	--	--	130	10	7	7	200
27...	.00	.00	1.5	.000	.000	--	--	--	--	--
27...	.00	.00	1.5	--	--	--	--	--	--	--

12301830 LAKE KOOCANUSA AT TENMILE CREEK, NEAR LIBBY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT									
06...	0	<100	0	30	10	1	1	10	10
06...	10	<100	0	10	10	1	1	10	10
06...	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--
28...	10	<100	0	0	0	0	1	3	7
28...	0	<100	0	0	0	0	0	0	10
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
APR									
12...	30	<100	0	120	110	2	0	20	10
12...	10	<100	0	110	80	1	0	30	10
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
MAY									
04...	10	<100	0	80	50	1	0	10	0
04...	30	<100	0	50	30	1	0	10	0
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
24...	10	2	0	20	0	0	0	20	10
24...	20	2	0	0	0	1	0	0	10
24...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
JUN									
03...	20	2	1	10	0	1	1	20	0
03...	40	1	1	0	0	0	0	0	0
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
21...	0	4	1	10	0	1	0	8	10
21...	10	3	3	0	0	1	0	10	10
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
JUL									
06...	10	<100	0	20	0	0	1	0	10
06...	10	<100	4	0	0	0	0	0	0
06...	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--
29...	10	<100	0	10	0	2	1	0	0
29...	0	<100	0	10	0	0	0	0	0
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
AUG									
09...	20	<100	0	10	0	0	0	0	0
09...	10	<100	0	0	0	0	0	0	0
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
30...	20	<100	3	10	0	1	0	0	10
30...	20	<100	2	0	0	0	1	0	0
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
SEP									
14...	0	<100	1	30	0	0	0	10	10
14...	0	<100	2	0	0	0	0	0	10
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
27...	10	<100	0	0	0	4	0	0	0
27...	20	<100	0	0	0	0	0	0	0
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--

12301830 LAKE KOOCANUSA AT TENMILE CREEK, NEAR LIBBY, MT--Continued

SELECTED VERTICAL PROFILES

MAY 04

DEPTH (FT)	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (MICROMHOS)	DISSOLVED OXYGEN (MG/L)	PH (UNITS)	TRANSMISSIBILITY (PERCENT)
0	7.6	225	10.8	8.2	--
1	7.6	225	10.8	8.2	<1.0
2	7.6	225	10.8	8.2	<1.0
5	7.5	225	10.7	8.2	<1.0
10	7.3	225	10.7	8.2	<1.0
20	7.0	225	10.8	8.2	<1.0
30	6.0	235	11.1	8.2	<1.0
40	5.8	235	11.2	8.2	<1.0
50	5.3	235	11.4	8.2	1.2
60	5.0	235	11.6	8.1	3.8
70	5.0	235	11.6	8.1	3.4
80	5.0	235	11.4	8.1	3.1
90	5.0	235	11.4	8.1	2.1
100	4.7	245	11.4	8.1	2.6
110	4.5	245	11.1	8.1	1.5
120	4.5	245	11.0	8.1	<1.0
127	4.5	245	11.0	8.1	<1.0
137	4.5	245	10.7	8.1	<1.0

AUG. 30

DEPTH (FT)	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (MICROMHOS)	DISSOLVED OXYGEN (MG/L)	PH (UNITS)	TRANSMISSIBILITY (PERCENT)
0	18.6	190	9.2	8.7	--
1	18.6	190	9.2	8.7	37
2	18.4	190	9.2	8.7	37
5	18.2	190	9.1	8.7	33
10	18.0	185	9.0	8.7	33
15	18.0	185	9.0	8.7	33
20	17.6	190	9.0	8.7	32
25	17.2	190	9.0	8.6	32
30	17.2	190	8.9	8.6	32
35	17.0	190	8.8	8.6	30
40	16.6	185	8.6	8.5	33
45	16.0	185	8.3	8.4	30
50	15.0	185	8.2	8.3	32
60	14.6	185	8.2	8.3	17
70	14.0	180	8.4	8.3	8.5
80	13.8	175	8.4	8.3	8.5
95	13.2	180	8.6	8.2	6.8
110	12.4	180	8.7	8.2	19
125	12.0	180	8.8	8.2	35
140	11.7	180	9.0	8.2	43
155	11.0	180	9.0	8.2	37
170	10.6	180	9.0	8.2	32
185	10.2	180	8.8	8.2	24
200	10.0	180	9.1	8.2	25
215	9.6	185	8.9	8.1	24
230	9.0	190	8.7	8.0	24
245	8.8	200	8.2	8.0	23
225	8.6	205	7.6	8.0	18

PRIMARY PRODUCTIVITY IN THE EUPHOTIC ZONE

DATE	PRIMARY PRODUCTIVITY (MG C/M^2/DAY)
OCT.	
06...	72
28...	52
APR.	
12...	62
MAY	
04...	30
24...	66
JUNE	
03...	190
21...	130
JULY	
06...	200
29...	130
AUG.	
09...	120
30...	170
SEPT.	
14...	150
27...	100

(Carbon-14, light and dark bottle method)

12301919 LAKE KOOCANUSA AT FOREBAY, NEAR LIBBY, MT

LOCATION.--Lat 48°24'43", long 115°18'33", in SW¼NW¼NE¼ sec.33, T.31 N., R.29 W., Lincoln County, Hydrologic Unit 17010101, in middle of old channel 0.2 mi (0.3 km) upstream from Libby Dam, and 11.6 mi (18.7 km) east of Libby.

PERIOD OF RECORD.--Water years 1972 to current year.

REMARKS.--Additional vertical profiles for temperature, specific conductance, dissolved oxygen, pH, transmissibility, and natural light penetration are available in files in Helena district office.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	DISSOLVED OXYGEN (MG/L)	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
OCT										
09...	1030	285	315	8.2	6.3	2	5.0	1.4	150	31
09...	1100	10	215	8.2	14.2	3	8.6	1.5	100	13
09...	1115	30	215	8.2	14.2	--	8.6	--	--	--
09...	1130	1.0	215	8.2	14.2	--	8.6	--	--	--
31...	1100	300	315	8.2	6.5	5	2.3	.6	160	32
31...	1115	10	210	8.2	11.5	4	8.7	.6	100	16
31...	1130	25	210	8.2	11.5	--	8.7	--	--	--
31...	1145	1.0	210	8.2	11.5	--	8.7	--	--	--
APR										
20...	1230	170	301	8.1	3.2	4	11.4	1.2	150	22
20...	1300	10	282	8.2	3.2	3	11.8	.8	140	18
20...	1315	20	225	8.1	3.2	--	11.8	--	--	--
20...	1330	2.0	225	8.2	3.2	--	11.8	--	--	--
MAY										
06...	1130	184	235	8.1	3.9	2	10.8	1.9	150	25
06...	1230	10	235	8.4	6.9	2	12.1	6.6	140	20
06...	1300	15	230	8.4	6.4	--	12.1	--	--	--
06...	1330	2.0	235	8.4	8.0	--	12.1	--	--	--
25...	1215	248	230	7.8	4.0	2	10.8	.6	150	30
25...	1245	10	220	8.4	11.2	2	11.3	1.9	130	18
25...	1300	20	215	8.3	10.2	--	10.8	--	--	--
25...	1315	5.0	220	8.4	11.8	--	11.3	--	--	--
JUN										
04...	1100	268	230	7.9	4.1	1	10.6	.4	150	25
04...	1230	10	190	8.1	9.2	3	10.3	.3	110	17
04...	1300	5.0	190	8.2	9.5	--	10.4	--	--	--
04...	1330	1.0	190	8.2	10.0	--	10.5	--	--	--
22...	1030	10	190	8.5	13.4	1	10.4	.6	110	13
22...	1230	281	230	7.9	4.2	1	10.6	.8	150	29
22...	1300	20	190	8.4	13.3	--	10.4	--	--	--
22...	1330	1.0	190	8.5	13.7	--	10.4	--	--	--
JUL										
09...	1100	295	225	8.2	4.9	3	9.8	.6	160	34
09...	1130	10	185	8.7	16.6	3	10.6	1.3	100	8
09...	1200	25	185	8.6	14.5	--	10.6	--	--	--
09...	1230	1.0	185	8.7	17.9	--	10.6	--	--	--
30...	1100	305	255	8.0	5.4	12	9.0	.7	150	30
30...	1200	10	190	8.6	16.4	12	9.5	.8	100	14
30...	1300	35	190	8.5	15.2	--	9.7	--	--	--
30...	1330	1.0	190	8.6	16.4	--	9.5	--	--	--
AUG										
11...	1200	305	293	8.0	6.0	11	8.2	.7	150	31
11...	1230	10	185	8.6	18.0	12	9.2	.8	100	14
11...	1300	40	185	8.3	14.9	--	8.6	--	--	--
11...	1330	1.0	185	8.5	18.5	--	9.0	--	--	--
31...	1100	10	180	8.6	18.7	2	9.0	.6	99	9
31...	1230	300	289	8.0	6.1	3	7.5	.4	150	35
31...	1300	40	180	8.4	16.5	--	8.4	--	--	--
31...	1330	1.0	175	8.6	19.0	--	8.9	--	--	--
SEP										
16...	1100	304	235	7.9	6.2	3	7.2	.6	140	20
16...	1300	10	185	8.5	16.8	4	9.5	.9	100	12
16...	1330	50	180	8.4	16.0	--	9.3	--	--	--
16...	1400	1.0	185	8.5	17.0	--	9.5	--	--	--
29...	1030	10	190	8.5	17.0	2	9.0	.6	100	20
29...	1100	307	245	7.8	6.2	4	6.8	.3	150	32
29...	1300	40	185	8.4	16.3	--	8.8	--	--	--
29...	1330	1.0	190	8.5	17.1	--	9.0	--	--	--

12301919 LAKE KOOCANUSA AT FOREBAY, NEAR LIBBY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	SODIUM AD-SORP-TION RATIO	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)
OCT										
09...	42	12	3.9	.1	.8	150	0	123	1.5	25
09...	28	7.2	1.5	.1	.4	106	0	87	1.1	14
09...	--	--	--	--	--	--	--	83	--	--
09...	--	--	--	--	--	--	--	85	--	--
31...	43	12	3.9	.1	.7	152	0	125	1.5	28
31...	29	7.0	1.5	.1	.3	104	0	85	1.1	14
31...	--	--	--	--	--	--	--	84	--	--
31...	--	--	--	--	--	--	--	85	--	--
APR										
20...	41	12	4.6	.2	.8	158	0	130	2.0	33
20...	38	11	4.0	.1	.8	149	0	122	1.5	29
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
MAY										
06...	42	12	3.9	.1	.8	158	0	130	2.0	28
06...	38	11	3.6	.1	.8	147	0	121	.9	26
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
25...	40	13	4.0	.1	.8	151	0	124	3.8	30
25...	34	10	2.9	.1	.7	132	0	108	.8	25
25...	--	--	--	--	--	--	--	105	--	--
25...	--	--	--	--	--	--	--	104	--	--
JUN										
04...	40	12	3.3	.1	.6	151	0	124	3.0	29
04...	31	9.0	2.0	.1	.4	119	0	98	1.5	18
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
22...	29	8.3	1.6	.1	.6	114	0	94	.6	12
22...	39	13	3.5	.1	.8	149	0	122	3.0	25
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
JUL										
09...	44	12	3.8	.1	.7	153	0	126	1.5	30
09...	28	8.0	1.8	.1	.5	103	6	94	.4	18
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
30...	41	12	3.6	.1	.7	148	0	121	2.4	27
30...	29	7.6	1.4	.1	.5	109	0	89	.4	13
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
AUG										
11...	41	12	3.5	.1	.7	147	0	121	2.4	40
11...	28	7.8	1.4	.1	.5	107	0	88	.4	14
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
31...	28	7.1	1.6	.1	.5	110	0	90	.4	13
31...	40	12	3.8	.1	.7	139	0	114	2.2	28
31...	--	--	--	--	--	--	--	86	--	--
31...	--	--	--	--	--	--	--	87	--	--
SEP										
16...	38	11	3.5	.1	.7	146	0	120	2.9	24
16...	28	7.4	1.6	.1	.4	108	0	89	.5	13
16...	--	--	--	--	--	--	--	83	--	--
16...	--	--	--	--	--	--	--	83	--	--
29...	28	7.8	1.6	.1	.5	100	0	82	.5	14
29...	40	11	3.5	.1	.7	138	0	113	3.5	24
29...	--	--	--	--	--	--	--	91	--	--
29...	--	--	--	--	--	--	--	86	--	--

12301919 LAKE KOOCANUSA AT FOREBAY, NEAR LIBBY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)
OCT										
09...	3.2	.7	6.0	174	.20	.00	.20	.01	.13	.14
09...	1.4	.3	3.9	113	.02	.00	.02	.01	.21	.22
09...	--	--	--	--	.01	.00	.01	.00	.11	.11
09...	--	--	--	--	.01	.00	.01	.01	.07	.08
31...	4.2	.8	6.0	182	.25	.00	.25	.02	.01	.03
31...	2.0	.3	3.9	110	.04	.01	.05	.00	.27	.27
31...	--	--	--	--	.05	.00	.05	.00	.00	.00
31...	--	--	--	--	.05	.00	.05	.00	.00	.00
APR										
20...	3.5	.3	5.6	180	.19	.00	.19	.03	.04	.07
20...	2.8	.3	5.2	169	.18	.00	.18	.02	.00	.00
20...	--	--	--	--	.18	.00	.18	.02	.03	.05
20...	--	--	--	--	.17	.01	.18	.02	.00	.02
MAY										
06...	4.7	.3	5.6	185	.19	.00	.19	.01	.00	.00
06...	4.2	.3	5.7	171	.12	.00	.12	.02	.09	.11
06...	--	--	--	--	.14	.00	.14	.01	.02	.03
06...	--	--	--	--	.11	.00	.11	.01	.00	.00
25...	5.0	.2	6.5	178	.16	.01	.17	.00	.13	.13
25...	4.3	.2	6.2	150	.01	.00	.01	.02	.16	.18
25...	--	--	--	--	.03	.01	.04	.03	.12	.15
25...	--	--	--	--	.01	.01	.02	.03	.12	.15
JUN										
04...	2.8	.3	6.5	197	.16	.01	.17	.12	.10	.22
04...	1.2	.2	6.2	156	.10	.01	.11	.01	.04	.05
04...	--	--	--	--	.11	.01	.12	.01	.39	.40
04...	--	--	--	--	.11	.01	.12	.01	.17	.18
22...	1.8	.1	5.5	131	.04	.01	.05	.01	.04	.05
22...	3.6	.3	6.5	185	.12	.01	.13	.00	.13	.13
22...	--	--	--	--	.04	.01	.05	.01	.12	.13
22...	--	--	--	--	.04	.01	.05	.01	.02	.03
JUL										
09...	4.0	.3	5.8	195	.21	.00	.21	.00	.02	.02
09...	1.8	.1	4.1	129	.03	.00	.03	.02	.05	.07
09...	--	--	--	--	.03	.00	.03	.03	.04	.07
09...	--	--	--	--	.00	.00	.00	.02	.03	.05
30...	3.3	.3	6.3	161	.22	.00	.22	.00	.11	.11
30...	1.2	.2	3.3	102	.01	.00	.01	.00	.17	.17
30...	--	--	--	--	.00	.00	.00	.01	.09	.10
30...	--	--	--	--	.01	.00	.01	.01	.25	.26
AUG										
11...	3.7	.3	6.1	182	.22	.00	.22	.00	.12	.12
11...	1.7	.1	2.9	116	.01	.00	.01	.00	.09	.09
11...	--	--	--	--	.01	.00	.01	.01	.09	.10
11...	--	--	--	--	.01	.00	.01	.00	.52	.52
31...	.8	.1	2.9	104	.01	.00	.01	.00	.02	.02
31...	3.2	.2	5.9	158	.27	.00	.27	.00	.00	.00
31...	--	--	--	--	.01	.00	.01	.00	.00	.00
31...	--	--	--	--	.00	.00	.00	.00	.08	.08
SEP										
16...	2.8	.2	6.0	165	.27	.00	.27	.00	.00	.00
16...	1.4	.1	3.1	114	.00	.00	.00	.00	.07	.07
16...	--	--	--	--	.00	.00	.00	.00	.22	.22
16...	--	--	--	--	.01	.00	.01	.00	.45	.45
29...	1.7	.1	3.1	107	.03	.00	.03	.00	.00	.00
29...	3.4	.3	6.2	176	.30	.00	.30	.00	.43	.43
29...	--	--	--	--	.57	.00	.57	.00	.20	.20
29...	--	--	--	--	.01	.00	.01	.00	.16	.16

12301919 LAKE KOOCANUSA AT FOREBAY, NEAR LIBBY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	CHLORO-PHYLL A (UG/L)	CHLORO-PHYLL B (UG/L)	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL IRON (FE) (UG/L)
OCT										
09...	.07	.03	1.6	--	--	120	0	0	1	40
09...	.04	.01	2.3	1.40	1.10	60	10	1	2	0
09...	.04	.01	1.2	1.90	2.60	--	--	--	--	--
09...	.04	.01	1.1	2.30	3.10	--	--	--	--	--
31...	.08	.05	4.8	--	--	120	0	2	1	90
31...	.05	.02	2.6	6.30	8.50	60	0	1	1	0
31...	.05	.04	10	.000	.000	--	--	--	--	--
31...	.05	.03	2.9	1.80	1.60	--	--	--	--	--
APR										
20...	.03	.00	5.4	--	--	130	0	2	1	290
20...	.04	.01	14	--	--	90	10	2	2	130
20...	.04	.01	2.0	--	--	--	--	--	--	--
20...	.04	.01	1.5	--	--	--	--	--	--	--
MAY										
06...	.04	.01	2.0	--	--	130	10	1	0	210
06...	.04	.00	3.3	6.39	.000	140	0	1	0	150
06...	.03	.01	2.8	4.60	.000	--	--	--	--	--
06...	.03	.00	2.5	3.53	.000	--	--	--	--	--
25...	.05	.03	2.9	--	--	70	10	1	0	270
25...	.03	.01	4.5	5.55	.000	60	20	0	0	750
25...	.03	.01	2.9	5.82	.000	--	--	--	--	--
25...	.02	.01	2.1	4.53	.000	--	--	--	--	--
JUN										
04...	.04	.03	1.9	--	--	10	20	0	0	90
04...	.03	.01	2.8	.000	.000	30	30	0	0	100
04...	.03	.01	2.8	.000	.000	--	--	--	--	--
04...	.03	.01	2.1	.000	.000	--	--	--	--	--
22...	.02	.01	2.7	.000	.000	80	20	0	0	90
22...	.03	.01	1.5	--	--	60	10	0	0	100
22...	.02	.01	5.4	11.3	.000	--	--	--	--	--
22...	.01	.01	2.5	.000	.000	--	--	--	--	--
JUL										
09...	.03	.04	2.3	--	--	60	0	0	0	90
09...	.02	.01	3.9	.000	.000	60	0	0	0	30
09...	.01	.01	3.2	.000	.000	--	--	--	--	--
09...	.01	.00	3.6	.000	.000	--	--	--	--	--
30...	.04	.01	2.3	--	--	90	0	1	1	80
30...	.01	.00	1.9	3.68	1.64	40	20	1	1	10
30...	.02	.00	8.7	.000	.000	--	--	--	--	--
30...	.01	.00	2.3	2.53	.204	--	--	--	--	--
AUG										
11...	.03	.02	1.5	--	--	70	20	1	1	70
11...	.00	.00	1.9	2.93	1.42	40	20	1	0	10
11...	.00	.00	1.8	.000	.000	--	--	--	--	--
11...	.00	.00	--	3.59	2.44	--	--	--	--	--
31...	.00	.00	3.9	.000	.000	40	20	0	1	0
31...	.03	.01	1.3	--	--	70	0	1	1	--
31...	.01	.00	1.6	2.05	.561	--	--	--	--	--
31...	.00	.01	2.8	9.73	4.54	--	--	--	--	--
SEP										
16...	.02	.04	1.5	--	--	30	20	0	1	30
16...	.00	.01	1.2	.000	.000	100	20	0	1	10
16...	.00	.00	1.9	.000	.000	--	--	--	--	--
16...	.00	.00	1.1	12.6	10.3	--	--	--	--	--
29...	.00	.01	1.2	2.14	.875	70	10	1	1	0
29...	.03	.03	1.6	--	--	70	0	1	1	20
29...	.00	.03	1.2	4.37	2.97	--	--	--	--	--
29...	.00	.00	1.4	3.94	1.76	--	--	--	--	--

12301919 LAKE KOOCANUSA AT FOREBAY, NEAR LIBBY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT									
09...	0	<100	1	10	10	1	1	10	20
09...	0	0	1	10	10	1	1	10	10
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
31...	0	0	0	50	0	2	2	0	0
31...	0	0	1	20	0	2	2	0	0
31...	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--
APR									
20...	10	<100	0	110	80	0	1	170	10
20...	20	<100	1	70	50	0	1	10	10
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
MAY									
06...	10	<100	1	90	10	0	0	40	0
06...	0	<100	0	70	50	1	0	40	0
06...	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--
25...	20	2	2	20	0	0	0	20	10
25...	10	3	3	10	0	0	0	50	0
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
JUN									
04...	10	2	1	10	0	1	1	0	0
04...	30	2	0	0	0	1	0	10	10
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
22...	10	0	0	4	2	1	1	4	1
22...	10	0	2	10	2	1	1	10	10
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
JUL									
09...	0	<100	2	10	10	0	0	0	0
09...	0	<100	2	0	0	0	0	0	0
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
30...	10	<100	0	20	0	1	0	0	0
30...	20	<100	0	10	0	1	0	0	0
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
AUG									
11...	0	<100	1	20	0	0	0	10	0
11...	0	<100	1	0	0	0	0	10	0
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
31...	20	<100	4	0	0	0	1	0	0
31...	10	<100	0	20	0	1	0	10	0
31...	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--
SEP									
16...	10	<100	0	20	0	2	0	0	0
16...	10	<100	0	10	0	2	0	0	0
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
29...	0	<100	0	10	10	0	0	0	0
29...	10	<100	0	30	0	1	0	20	0
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--

12301919 LAKE KOOCANUSA AT FOREBAY, NEAR LIBBY, MT--Continued

SELECTED VERTICAL PROFILES

MAY 06

DEPTH (FT)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	DIS-SOLVED OXYGEN (MG/L)	PH (UNITS)	TRANS-MISS-IBILITY (PER-CENT)
0	8.6	235	12.1	8.4	--
1	8.4	235	12.1	8.4	9.5
2	8.0	235	12.1	8.4	5.3
5	7.5	235	12.1	8.4	4.1
10	6.9	235	12.1	8.4	3.4
15	6.4	230	12.1	8.4	2.8
20	6.0	230	12.0	8.3	2.6
30	5.2	235	11.6	8.3	2.6
40	4.8	220	11.5	8.3	2.8
50	4.3	220	11.3	8.2	3.1
60	4.1	230	11.0	8.2	4.1
70	4.0	230	11.0	8.2	3.1
80	4.0	230	11.0	8.2	3.8
90	4.0	230	11.0	8.2	3.8
100	4.0	230	11.0	8.2	4.1
110	4.0	230	11.0	8.2	3.8
125	4.0	230	11.0	8.2	2.6
140	3.9	230	10.8	8.2	3.1
155	3.9	230	10.8	8.2	3.1
170	3.9	235	10.8	8.2	2.6
184	3.9	235	10.8	8.1	1.7
194	3.9	235	10.8	8.1	1.1

AUG. 31

DEPTH (FT)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	DIS-SOLVED OXYGEN (MG/L)	PH (UNITS)	TRANS-MISS-IBILITY (PER-CENT)
0	19.0	175	8.9	8.6	--
1	19.0	175	8.9	8.6	39
2	19.0	175	9.0	8.6	39
5	19.0	175	9.0	8.6	37
10	18.7	180	9.0	8.6	37
15	18.5	180	9.0	8.6	35
20	18.0	180	8.8	8.6	35
25	17.9	180	9.0	8.6	35
30	18.0	180	8.8	8.6	33
35	17.0	180	8.8	8.6	33
40	16.5	180	8.4	8.4	33
50	16.0	180	8.0	8.2	37
60	15.5	175	7.8	8.2	41
70	15.0	170	7.9	8.2	48
80	14.0	170	7.9	8.2	37
90	14.0	170	8.2	8.2	50
100	13.3	165	8.4	8.2	45
110	13.0	165	8.3	8.2	50
125	12.1	170	8.5	8.2	50
140	11.5	170	9.0	8.2	48
155	11.1	170	9.1	8.2	43
170	11.0	170	9.2	8.2	39
185	10.1	160	9.2	8.2	37
200	10.0	160	9.3	8.2	37
215	10.0	160	9.2	8.2	27
230	9.0	165	9.1	8.2	24
245	8.5	170	8.9	8.2	20
255	7.5	190	8.7	8.0	20
270	6.8	205	8.1	8.0	21
285	6.1	225	7.6	8.0	21
300	6.1	230	7.5	8.0	24
310	6.1	230	7.4	7.8	23

PRIMARY PRODUCTIVITY IN THE EUPHOTIC ZONE

DATE	PRIMARY PRODUCTIVITY (MG C/M^2/DAY)
OCT.	
09...	70
31...	75
APR.	
20...	23
MAY	
06...	230
25...	120
JUNE	
04...	140
22...	92
JULY	
09...	150
30...	78
AUG.	
11...	420
31...	130
SEPT.	
16...	68
29...	81

(Carbon-14, light and dark bottle method)

12301920 LAKE KOOCANUSA NEAR LIBBY, MT

LOCATION.--Lat 48°24'38", long 115°18'47", in NW¼ sec.33, T.31 N., R.29 W., Lincoln County, Hydrologic Unit 17010101, Kootenai National Forest, in block 18 of Libby Dam on Kootenai River, 11 mi (18 km) east of Libby, and at mile 221.9 (357.0 km).

DRAINAGE AREA.--8,985 mi² (23,271 km²), approximately.

PERIOD OF RECORD.--March 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers). Prior to July 2, 1973, nonrecording gage on upstream face of dam at same datum.

REMARKS.--Reservoir and flow completely controlled by gravity type dam with tainter gated spillway; construction began in 1967; completed in 1973. Storage began Mar. 21, 1972. Usable capacity, 5,694,000 acre-ft (7.02 km³) between elevation 2,202.0 ft (671.17 m), bottom of sluice gate, and 2,459 ft (749.5 m), controlled spillway elevation. Dead storage, 115,400 acre-ft (142 hm³) below elevation 2,202.0 ft (671.17 m). Minimum operating level, 760,100 acre-ft (937 hm³), elevation 2,287.0 ft (697.08 m) for on-site power generation. Figures given herein represent usable contents. Water is used for power production, flood control, irrigation, and recreation.

COOPERATION.--Capacity table and elevations furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 5,698,000 acre-ft (7.03 km³) Aug. 6, 1976, elevation, 2,459.10 ft (749.534 m); minimum observed since normal low operating level reached in May 1972, 131,900 acre-ft (163 hm³) Dec. 16-21, 1972, elevation, 2,226.5 ft (678.64 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 5,698,000 acre-ft (7.03 km³) Aug. 6, elevation, 2,459.10 ft (749.534 m); minimum, 1,084,000 acre-ft (1.34 km³) Apr. 6, elevation, 2,307.30 ft (703.265 m).

Capacity table (elevation, in feet, and contents, in acre-ft)

2,300	961,500	2,380	2,729,000
2,320	1,313,000	2,400	3,353,000
2,340	1,718,000	2,420	4,059,000
2,360	2,185,000	2,440	4,853,000
		2,460	5,740,000

ELEVATION, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2452.78	2444.75	2429.50	2409.95	2368.65	2339.10	2310.93	2323.11	2403.97	2443.68	2459.00	2458.52
2	2452.56	2444.30	2429.05	2408.70	2367.30	2338.08	2310.08	2324.09	2405.15	2445.42	2459.00	2458.50
3	2452.30	2443.90	2428.80	2407.50	2365.95	2336.75	2309.13	2325.53	2406.19	2446.80	2458.90	2458.40
4	2452.18	2443.58	2429.14	2406.30	2364.40	2335.38	2308.27	2327.46	2407.13	2447.96	2459.00	2458.45
5	2451.97	2443.13	2429.21	2405.20	2362.90	2334.04	2307.66	2329.62	2408.12	2449.10	2459.08	2458.45
6	2451.81	2442.96	2429.18	2404.20	2361.40	2332.74	2307.30	2332.15	2409.06	2450.19	2459.10	2458.40
7	2451.64	2442.65	2429.09	2403.00	2360.00	2331.38	2307.40	2334.77	2409.80	2451.00	2458.90	2458.35
8	2451.48	2442.30	2428.96	2401.63	2358.60	2329.98	2307.60	2337.82	2410.68	2451.79	2458.82	2458.40
9	2451.30	2441.98	2428.90	2400.36	2357.50	2328.37	2307.82	2341.30	2411.71	2452.58	2458.97	2458.45
10	2451.15	2441.52	2428.62	2399.12	2356.20	2326.71	2308.15	2345.43	2413.35	2453.23	2458.93	2458.43
11	2450.98	2441.18	2428.26	2397.85	2355.00	2325.40	2308.72	2350.25	2415.10	2453.75	2458.88	2458.57
12	2450.79	2440.73	2427.57	2396.61	2353.87	2324.30	2309.52	2354.70	2416.80	2454.34	2458.90	2458.64
13	2450.56	2440.30	2426.77	2395.30	2353.00	2323.25	2310.70	2358.43	2418.40	2455.02	2458.84	2458.69
14	2450.36	2439.93	2425.91	2393.90	2352.05	2322.15	2311.79	2361.76	2419.75	2455.70	2458.75	2458.79
15	2450.16	2439.48	2425.13	2392.58	2351.11	2321.10	2312.60	2365.20	2421.00	2456.21	2458.68	2458.80
16	2449.98	2439.15	2424.26	2391.18	2350.18	2320.10	2313.60	2368.10	2422.30	2456.41	2458.63	2458.79
17	2449.79	2438.68	2423.37	2389.62	2349.16	2319.20	2314.60	2370.75	2423.72	2456.41	2458.75	2458.75
18	2449.57	2438.23	2422.45	2388.32	2348.28	2318.40	2315.40	2373.17	2425.24	2456.47	2458.85	2458.71
19	2449.45	2437.70	2421.76	2387.30	2342.42	2317.60	2316.20	2375.45	2427.02	2456.75	2458.85	2458.66
20	2449.23	2437.10	2421.45	2386.42	2346.62	2317.07	2316.80	2377.70	2428.75	2457.10	2458.85	2458.54
21	2449.05	2436.49	2421.15	2384.94	2345.84	2316.41	2317.50	2380.00	2430.56	2457.30	2458.85	2458.36
22	2448.85	2435.87	2420.50	2383.40	2345.09	2315.68	2318.07	2382.20	2432.16	2457.78	2458.80	2458.11
23	2448.55	2435.21	2419.47	2382.00	2344.31	2315.26	2318.64	2384.30	2433.68	2458.25	2458.80	2457.88
24	2448.15	2434.45	2418.44	2380.50	2343.50	2314.64	2319.20	2386.50	2435.00	2458.41	2458.80	2457.63
25	2447.60	2433.73	2417.42	2379.00	2342.77	2314.34	2319.74	2389.30	2436.40	2458.58	2458.80	2457.42
26	2447.30	2433.10	2416.30	2377.45	2342.05	2313.95	2320.20	2391.90	2437.60	2458.68	2458.80	2457.41
27	2446.90	2432.47	2415.30	2375.90	2341.27	2313.69	2320.85	2393.88	2438.70	2458.85	2458.97	2457.30
28	2446.37	2431.70	2414.27	2374.25	2340.56	2313.46	2321.35	2396.10	2439.70	2458.95	2458.89	2457.20
29	2445.90	2430.88	2413.23	2372.82	2339.90	2313.20	2321.83	2398.50	2440.70	2458.90	2458.79	2457.16
30	2445.43	2430.15	2412.19	2371.35	---	2312.79	2322.38	2400.60	2442.00	2458.90	2458.69	2457.07
31	2445.00	---	2411.10	2369.96	---	2311.82	---	2402.30	---	2458.98	2458.55	---
MAX	2,452.78	2,444.75	2,429.50	2,409.95	2,368.65	2,339.10	2,322.38	2,402.30	2,442.00	2,458.98	2,459.10	2,458.80
MIN	2,445.00	2,430.15	2,411.10	2,369.96	2,339.90	2,311.82	2,307.30	2,323.11	2,403.97	2,443.68	2,458.55	2,457.07
(†)	5,066	4,451	3,734	2,446	1,716	1,164	1,359	3,430	4,938	5,693	5,673	5,604
(††)	-354,000	-615,000	-717,000	-1,288,000	-730,000	-552,000	+195,000	+2,071,000	+1,508,000	+755,000	-20,000	-69,000

CAL YR 1975 . . . . . (††) +812,000
WTR YR 1976 . . . . . (††) +184,000

† Contents, in thousands of acre-feet, at end of month.
†† Change in contents, in acre-ft.

12301933 KOOTENAI RIVER BELOW LIBBY DAM, NEAR LIBBY, MT

LOCATION.--Lat 48°24'03", long 115°19'11", in SW¼SW¼SW¼ sec.33, T.31 N., R.29 W., Lincoln County, Hydrologic Unit 17010101, Kootenai National Forest, on right bank 0.7 mi (1.1 km) downstream from Libby Dam, 2.8 mi (4.5 km) upstream from Fisher River, 11 mi (18 km) east of Libby, and at mile 221.0 (335.6 km).

DRAINAGE AREA.--8,985 mi^2 (23,271 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,100.00 ft (640.080 m) above mean sea level (Corps of Engineers bench mark). Prior to Feb. 13, 1974, nonrecording gage at site 0.4 mi (0.6 km) upstream at same datum.

REMARKS.--Water-discharge records excellent. Flow completely regulated by Lake Koocanusa since Mar. 21, 1972 (see preceding page). Diversions for irrigation of about 14,000 acres (57 km^2) from tributaries above station in Canada and the United States.

AVERAGE DISCHARGE.--5 years, 12,910 ft^3/s (365.6 m^3/s), 19.51 in/yr (496 mm/yr), 9,353,000 acre-ft/yr (11.5 km^3/yr) adjusted for change in contents in Lake Koocanusa since Mar. 21, 1972.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,200 ft^3/s (1,340 m^3/s) Aug. 5, 1974, gage height, 27.50 ft (8.382 m); minimum daily, 1,900 ft^3/s (53.8 m^3/s) Jan. 29, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 28,900 ft^3/s (818 m^3/s) Aug. 7, gage height, 24.56 ft (7.486 m); minimum daily, 3,060 ft^3/s (86.7 m^3/s) Apr. 26.

CORRECTIONS.--Figures of adjusted runoff in inches in WDR MT-75-1 have been corrected to 23.54 for calendar year 1974 and 16.22 for water year 1975.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11400	15400	15500	24700	22000	11700	13000	3160	3590	4270	16400	13300
2	10500	15600	13200	24600	21800	14000	12700	3160	5990	4710	18700	13500
3	10400	15400	14000	24600	21800	17700	12400	3160	5920	5300	18700	13900
4	10300	15200	12000	24500	22000	17600	12400	3160	6040	5410	18500	10900
5	10300	15100	10300	24200	22000	17600	10700	3160	3650	5410	18700	10900
6	10300	13600	10300	24400	22000	17600	8400	3170	3620	8200	22700	10900
7	10500	15300	10300	24600	20200	17800	6200	3170	6200	15100	28100	13700
8	10300	15500	10000	24800	19300	18500	6800	3150	6230	17300	22900	11000
9	10200	15600	12700	25000	19300	20500	7600	3160	8830	17700	20100	10800
10	10600	15900	15200	24900	19300	20600	8630	3160	6230	18800	22500	10800
11	10300	15500	18100	24900	19300	18000	8660	3220	6200	18700	21900	7610
12	10300	15200	20300	24800	17800	15000	8600	4000	3190	15300	18800	7620
13	10400	15400	21600	24900	15400	14400	8420	4330	3130	13900	18600	10800
14	9600	15300	22100	24900	15300	14300	8420	4170	4650	13900	18600	8810
15	10100	15400	22000	24900	15300	14300	8340	4060	4170	15300	18600	10700
16	10200	15600	22000	24800	15300	13600	4290	3980	4170	20800	18600	9010
17	10200	17400	21900	24500	15300	13600	3250	4170	4150	24300	16900	11400
18	10000	17500	22100	24700	15300	12500	3250	4150	4170	24400	16900	10700
19	10100	17500	20400	20300	13900	11500	3230	4080	3160	21100	17000	10700
20	10200	17500	11000	19300	12700	10000	3260	4130	3190	18600	18600	13000
21	10500	17500	11000	25100	12700	9990	3260	4040	4190	17900	17600	12700
22	9640	17600	17100	24700	12600	9760	3150	3160	4130	12500	17500	13900
23	11900	18000	25000	24600	12900	9040	3090	3190	4110	9200	15600	14000
24	15300	20000	24900	24900	12900	8060	3100	3230	4130	14800	16400	13900
25	15200	20100	24700	24800	12700	7320	3100	3190	4110	16300	14700	13200
26	15400	20200	24900	24600	12600	7220	3060	3220	3070	17500	14500	8530
27	15300	20200	24800	24700	12500	6320	3130	3250	3130	14300	15500	9330
28	15300	20000	24800	24900	12100	6180	3150	3170	4130	17000	18600	9350
29	15300	19900	24600	24800	11800	6200	3160	3070	4110	16900	17500	8080
30	15300	18800	24500	24200	---	7350	3150	3120	4130	18400	16200	9800
31	15300	---	24600	21900	---	12900	---	3100	---	13900	16400	---
TOTAL	360640	507200	575900	753500	478100	401140	189900	107640	135720	457200	572300	332840
MEAN	11630	16910	18580	24310	16490	12940	6330	3472	4524	14750	18460	11090
MAX	15400	20200	25000	25100	22000	20600	13000	4330	8830	24400	28100	14000
MIN	9600	13600	10000	19300	11800	6180	3060	3070	3070	4270	14500	7610
AC-FT	715300	1006000	1142000	1495000	948300	795700	376700	213500	269200	906900	1135000	660200
MEAN†	5876	6571	6912	3366	3795	3963	9608	37150	29870	27030	18130	9940
CFSM†	0.65	0.73	0.77	0.37	0.42	0.44	1.07	4.13	3.32	3.01	2.02	1.11
IN†	0.75	0.82	0.89	0.43	0.46	0.51	1.19	4.77	3.71	3.47	2.33	1.23
AC-FT†	361300	391000	425000	207000	218300	243700	571700	2284000	1777000	1662000	1115000	591200

OBSERVED

CAL YR 1975	TOTAL	3717320	MEAN	10180	MAX	25000	MIN	2100	AC-FT	7373000		
WTR YR 1976	TOTAL	4872080	MEAN	13310	MAX	28100	MIN	3060	AC-FT	9664000		

ADJUSTED

CAL YR 1975	TOTAL	4126444	MEAN	11310	CFSM	1.26	IN	17.08	AC-FT	8185000		
WTR YR 1976	TOTAL	4964861	MEAN	13570	CFSM	1.51	IN	20.55	AC-FT	9848000		

† Adjusted for change in contents in Lake Koocanusa.

12301933 KOOTENAI RIVER BELOW LIBBY DAM, NEAR LIBBY, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1967 to current year.
SUSPENDED SEDIMENT DISCHARGE: October 1967 to January 1976.

INSTRUMENTATION.--Temperature recorder since May 15, 1976; seasonally (spring, summer, fall) 1968-75.

REMARKS.--"Prior to March 25, 1974, at site, 3.2 mi (5.1 km) downstream." Flow regulated by Libby Dam since Mar. 21, 1972.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 21.5°C Aug. 6, 1970; minimum, 0.0°C on many days during winter periods most years prior to Libby Dam.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum 12.0°C on several days during October and September.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)
OCT											
02...	1400	10400	219	8.0	17.0	10.5	4	4	12.4	120	.5
14...	1300	10400	182	8.1	8.0	10.0	5	3	13.1	126	.6
NOV											
04...	1130	15100	196	8.0	18.0	11.5	4	2	9.7	96	.6
18...	1045	17600	179	8.1	-3.0	10.5	3	1	10.4	102	.2
DEC											
05...	1030	10300	220	8.2	.0	9.5	5	2	9.2	87	.8
18...	1000	22000	221	8.3	.0	8.0	3	2	14.4	131	.6
30...	1300	24600	222	8.3	.0	7.0	4	2	14.2	126	.5
JAN											
14...	1045	25000	218	8.2	-2.0	6.0	4	2	14.6	126	.5
23...	1030	24700	199	8.3	-1.0	5.0	4	2	15.8	133	.6
FEB											
03...	1230	21700	226	8.3	-1.0	4.0	4	2	14.8	121	.4
19...	0815	15300	230	8.2	-3.0	3.0	5	2	13.6	110	.4
MAR											
04...	1130	17700	228	8.2	-10.0	2.0	3	2	14.8	116	.3
18...	1230	12500	255	8.2	6.0	2.5	3	2	13.8	110	1.8
30...	1100	10300	270	8.2	16.5	4.0	5	3	12.4	102	.7
APR											
19...	1100	3280	285	8.2	11.0	4.0	4	2	12.8	104	1.6
MAY											
03...	1045	3150	297	8.2	10.5	5.0	4	3	12.0	101	1.5
14...	0845	5450	292	8.2	13.0	6.0	5	3	12.2	105	.5
JUN											
01...	1030	6160	273	8.3	12.0	6.0	2	4	12.0	104	1.4
14...	1100	8480	255	8.2	18.5	7.5	2	3	10.6	96	1.5
JUL											
01...	1000	8010	260	8.1	16.0	7.5	2	4	10.3	93	.9
15...	1300	13900	220	8.2	24.0	8.5	8	3	10.0	92	.6
AUG											
04...	1300	18600	213	8.4	23.0	9.5	18	3	9.8	93	.4
18...	1300	18700	215	8.2	21.0	10.5	16	2	9.5	92	.9
SEP											
02...	1630	18700	217	8.2	25.0	11.0	3	2	8.8	86	.5
16...	1600	9450	180	8.2	26.0	11.0	--	1	8.6	85	.4

12301933 KOOTENAI RIVER BELOW LIBBY DAM, NEAR LIBBY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	SODIUM AD-SORPTION RATIO	DIS-SOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)
OCT											
02...	110	16	31	8.2	2.2	.1	.6	116	0	95	1.9
14...	110	16	31	7.8	2.0	.1	.6	114	0	94	1.4
NOV											
04...	100	11	29	7.1	1.6	.1	.5	110	0	90	1.8
18...	100	11	29	7.2	1.6	.1	.4	111	0	91	1.4
DEC											
05...	110	17	30	7.9	1.8	.1	.5	110	0	90	1.1
18...	120	21	33	7.9	1.9	.1	.6	114	0	94	.9
30...	110	18	33	7.7	2.3	.1	.6	117	0	96	.9
JAN											
14...	110	16	31	8.1	2.2	.1	.7	116	0	95	1.2
23...	120	17	32	8.6	2.1	.1	.6	120	0	98	1.0
FEB											
03...	110	12	31	8.1	2.2	.1	.8	121	0	99	1.0
19...	120	23	32	10	2.1	.1	.6	120	0	98	1.2
MAR											
04...	120	18	34	8.8	2.1	.1	.7	126	0	103	1.3
18...	140	28	39	9.5	2.3	.1	.7	132	0	108	1.3
30...	140	23	36	12	3.5	.1	.7	142	0	116	1.4
APR											
19...	150	25	39	13	3.7	.1	.8	154	0	126	1.6
MAY											
03...	150	22	39	12	3.9	.1	.8	152	0	125	1.5
14...	140	18	39	11	4.1	.2	.8	152	0	125	1.5
JUN											
01...	140	25	39	11	3.4	.1	.7	143	0	117	1.1
14...	140	32	39	11	3.1	.1	.8	135	0	111	1.4
JUL											
01...	130	20	34	11	2.0	.1	.7	134	0	110	1.7
15...	120	16	32	9.3	2.3	.1	.6	125	0	103	1.3
AUG											
04...	120	23	34	8.4	2.0	.1	.5	118	0	97	.8
18...	110	23	32	7.8	1.8	.1	.5	109	0	89	1.1
SEP											
02...	110	14	31	8.0	1.9	.1	.5	117	0	96	1.2
16...	--	--	--	--	--	--	--	--	--	93	--

DATE	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)
OCT											
02...	16	1.8	.4	5.4	132	.18	3710	.14	.00	.14	.00
14...	15	1.0	.4	5.1	117	.16	3290	.09	.00	.09	.00
NOV											
04...	13	1.8	.3	4.5	118	.16	4810	.09	.00	.09	.00
18...	13	1.6	.3	4.0	112	.15	5320	.08	.00	.08	.04
DEC											
05...	16	1.3	.4	4.2	121	.16	3370	.09	.01	.10	.02
18...	19	1.7	.3	4.0	123	.17	7310	.13	.00	.13	.01
30...	20	1.8	.3	3.9	125	.17	8300	.09	.00	.09	.00
JAN											
14...	19	1.9	.4	3.8	123	.17	8300	.31	.00	.31	.01
23...	19	1.8	.3	3.7	129	.18	8600	.11	.00	.11	.02
FEB											
03...	20	1.5	.3	4.0	124	.17	7270	.10	.00	.10	.00
19...	18	1.6	.3	3.7	127	.17	5250	.10	.00	.10	.02
MAR											
04...	26	1.3	.3	4.1	136	.19	6500	.19	.00	.19	.02
18...	23	2.0	.3	4.6	143	.19	4830	.14	.01	.15	.02
30...	24	2.4	.3	4.9	156	.21	4340	.22	.00	.22	.00
APR											
19...	30	3.6	.3	5.3	171	.23	1510	.17	.01	.18	.02
MAY											
03...	27	3.4	.3	5.3	168	.23	1430	.17	.00	.17	.01
14...	27	3.3	.3	5.6	167	.23	2460	.22	.01	.23	.04
JUN											
01...	25	4.6	.2	6.5	173	.24	2880	.14	.01	.15	.01
14...	26	5.0	.2	6.5	171	.23	3920	.17	.02	.19	.01
JUL											
01...	27	2.8	.2	6.4	159	.22	3440	.15	.01	.16	.00
15...	20	2.2	.2	5.5	139	.19	5220	.16	.00	.16	.00
AUG											
04...	20	1.8	.1	4.8	126	.17	6330	.16	.00	.16	.00
18...	18	1.8	.2	5.2	117	.16	5910	.18	.00	.18	.00
SEP											
02...	17	1.7	.2	4.3	122	.17	6160	.17	.00	.17	.00
16...	--	--	--	--	--	--	--	.14	.00	.14	.00

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	CHLOROPHYLL A (UG/L)	CHLOROPHYLL B (UG/L)	TOTAL ALUMINUM (AL) (UG/L)	DISSOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)
OCT											
02...	.09	.09	.06	.04	1.9	1.60	2.80	90	10	2	0
14...	.06	.06	.07	.10	6.8	2.70	5.40	110	10	2	2
NOV											
04...	.11	.11	.06	.05	6.5	1.10	2.10	90	30	1	1
18...	1.2	1.2	.04	.04	1.9	.500	.200	60	20	1	1
DEC											
05...	.03	.05	.04	.03	3.4	.700	.700	70	10	0	0
18...	.12	.13	.03	.03	2.0	4.00	7.10	80	0	0	0
30...	.01	.01	.05	.04	1.9	1.60	1.40	90	10	1	1
JAN											
14...	.14	.15	.07	.06	1.8	.000	.000	70	0	2	2
23...	.09	.11	.08	.03	4.4	.400	.500	60	10	1	0
FEB											
03...	1.3	1.3	.04	.02	2.9	.300	1.30	60	10	1	1
19...	.20	.22	.05	.04	5.4	--	--	80	20	0	0
MAR											
04...	.03	.05	.03	.02	12	1.60	2.70	110	10	0	0
18...	.10	.12	.04	.02	1.2	.200	.300	80	0	1	1
30...	.04	.04	.06	.01	1.3	.700	.400	70	0	1	1
APR											
19...	.02	.04	.04	.01	3.5	.000	.000	120	0	1	1
MAY											
03...	.02	.03	.02	.00	2.8	.000	.000	150	0	1	0
14...	.05	.09	.02	.01	2.9	.000	.000	130	10	1	1
JUN											
01...	.14	.15	.04	.01	10	.000	.000	70	0	0	0
14...	.14	.15	.03	.01	2.3	.000	.000	140	20	0	0
JUL											
01...	.13	.13	.03	.04	2.9	.000	.000	110	20	0	0
15...	.02	.02	.04	.01	7.0	.000	.000	130	40	1	1
AUG											
04...	.02	.02	.02	.01	2.0	2.96	.000	90	20	1	1
18...	.00	.00	.03	.01	1.2	.000	.000	70	20	1	0
SEP											
02...	.21	.21	.03	.00	2.8	.000	.000	260	20	0	1
16...	.02	.02	.00	.00	25	.000	.000	--	--	--	--

DATE	TOTAL IRON (FE) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MOLYBDENUM (MO) (UG/L)	DISSOLVED MOLYBDENUM (MO) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT										
02...	120	20	0	1	30	10	2	1	10	10
14...	60	0	<100	0	70	10	1	1	130	10
NOV										
04...	60	0	<100	0	20	5	1	0	0	2
18...	0	0	0	2	50	10	2	0	0	10
DEC										
05...	70	0	<100	3	20	0	2	0	0	0
18...	60	10	<100	1	10	0	2	1	0	0
30...	30	10	<100	0	20	0	1	1	10	0
JAN										
14...	0	0	<100	0	10	0	0	0	10	0
23...	40	10	<100	0	10	0	1	0	10	0
FEB										
03...	40	0	<100	1	20	0	1	0	10	0
19...	20	0	<100	1	30	0	1	1	30	0
MAR										
04...	90	10	<100	1	30	10	1	0	20	0
18...	160	0	<100	2	50	30	1	1	10	10
30...	130	0	<100	1	40	20	1	1	10	10
APR										
19...	340	60	<100	2	90	60	0	0	50	0
MAY										
03...	200	0	<100	0	60	50	1	0	50	0
14...	200	20	<100	0	50	0	1	1	10	10
JUN										
01...	160	20	2	1	10	0	2	0	20	0
14...	140	20	2	0	0	0	1	1	20	0
JUL										
01...	150	20	2	3	10	0	1	0	20	0
15...	140	20	<100	2	10	0	1	0	20	0
AUG										
04...	140	40	<100	0	10	0	0	0	0	0
18...	80	10	<100	0	0	0	1	0	10	0
SEP										
02...	170	10	<100	0	0	0	0	0	10	0
16...	--	--	--	--	--	--	--	--	--	--

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.0	11.0	11.5	11.5								
2	11.0	11.0	11.5	11.5								
3	11.0	11.0	11.5	11.5								
4	11.0	11.0	11.5	11.5								
5	11.0	11.0	11.5	11.5								
6	11.0	11.0	11.5	11.5								
7	11.0	11.0	12.0	11.5								
8	11.0	11.0	12.0	12.0								
9	11.0	11.0	12.0	12.0								
10	11.0	11.0	12.0	12.0								
11	11.0	11.0	12.0	12.0								
12	11.0	11.0	12.0	12.0								
13	11.0	11.0	12.0	12.0								
14	11.0	11.0	12.0	12.0								
15	11.0	11.0	12.0	12.0								
16	11.0	11.0	---	---								
17	11.0	11.0	---	---								
18	11.0	11.0	---	---								
19	11.0	11.0	---	---								
20	11.0	11.0	---	---								
21	11.0	11.0	---	---								
22	11.5	11.0	---	---								
23	11.5	11.0	---	---								
24	11.0	11.0	---	---								
25	11.5	11.0	---	---								
26	11.5	11.5	---	---								
27	11.5	11.5	---	---								
28	11.5	11.5	---	---								
29	11.5	11.5	---	---								
30	11.5	11.5	---	---								
31	11.5	11.5	---	---								
MONTH	11.5	11.0	---	---								

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1			---	---	6.5	6.0	8.5	7.5	---	---	11.0	11.0
2			---	---	6.5	6.0	7.5	7.0	---	---	11.0	11.0
3			---	---	6.5	5.5	7.5	7.5	---	---	11.0	10.5
4			---	---	6.5	6.0	8.5	7.5	9.5	9.0	11.5	11.0
5			---	---	7.0	6.5	7.5	7.5	9.0	9.0	11.5	11.5
6			---	---	7.5	6.5	8.5	7.0	9.0	9.0	11.5	11.5
7			---	---	6.5	6.5	7.5	7.0	9.0	9.0	11.5	11.5
8			---	---	7.0	6.5	7.5	7.5	9.0	9.0	11.5	11.0
9			---	---	7.0	6.5	7.5	7.0	9.0	9.0	11.5	11.0
10			---	---	7.0	6.5	7.5	7.0	9.5	9.0	11.0	11.0
11			---	---	6.5	6.5	7.5	7.0	9.5	9.0	11.5	11.0
12			---	---	6.5	6.5	7.5	7.5	9.5	9.5	11.5	11.5
13			---	---	7.0	6.5	7.5	7.5	9.5	9.5	12.0	11.5
14			---	---	7.5	7.0	7.5	7.5	9.5	9.5	---	---
15			7.0	5.5	8.5	7.0	8.5	7.5	9.5	9.5	---	---
16			7.0	6.0	7.0	7.0	9.0	8.5	10.0	9.5	---	---
17			6.5	5.5	7.5	7.0	8.5	7.5	10.5	10.0	11.0	10.5
18			6.0	5.0	7.5	7.0	8.5	7.5	10.5	10.0	10.5	10.0
19			6.5	5.5	7.5	6.5	9.0	8.5	10.5	10.0	10.5	10.5
20			6.5	5.5	7.5	7.0	9.0	8.5	10.5	10.0	10.5	10.5
21			7.0	5.5	7.5	7.5	8.5	8.5	10.5	10.5	11.0	10.5
22			6.5	6.0	7.5	7.0	9.0	8.5	10.5	10.5	11.0	11.0
23			6.5	6.0	7.0	6.5	9.0	8.5	10.5	10.5	11.0	11.0
24			6.5	6.5	7.5	7.0	9.0	8.5	10.5	10.5	11.0	11.0
25			6.5	6.0	7.5	7.0	9.0	8.5	10.5	10.5	11.0	11.0
26			6.5	5.5	8.5	7.0	9.0	8.5	10.5	10.5	11.0	11.0
27			7.5	6.5	8.5	6.5	9.0	8.5	10.5	10.5	11.0	11.0
28			7.5	6.0	7.5	7.0	9.5	9.0	10.5	10.5	11.0	11.0
29			7.0	6.0	7.5	7.5	---	---	11.0	10.5	11.0	11.0
30			7.0	6.5	8.5	7.5	---	---	11.0	11.0	11.5	11.0
31			6.5	6.0	---	---	---	---	11.0	11.0	---	---
MONTH			---	---	8.5	5.5	9.5	7.0	11.0	9.0	12.0	10.0
YEAR	12.0	5.0										

12301933 KOOTENAI RIVER BELOW LIBBY DAM, NEAR LIBBY, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO January 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	11400	6	185	15400	1	42	15500	2	84
2	10500	2	57	15600	1	42	13200	3	107
3	10400	4	112	15400	9	374	14000	13	491
4	10300	6	167	15200	23	944	12000	6	194
5	10300	6	167	15100	6	245	10300	3	83
6	10300	7	195	13600	31	1140	10300	6	167
7	10500	6	170	15300	9	372	10300	2	56
8	10300	5	139	15500	11	460	10000	2	54
9	10200	8	220	15600	14	590	12700	2	69
10	10600	8	229	15900	7	301	15200	1	41
11	10300	32	890	15500	3	126	18100	7	342
12	10300	29	806	15200	5	205	20300	8	438
13	10400	3	84	15400	2	83	21600	2	117
14	9600	5	130	15300	3	124	22100	3	179
15	10100	5	136	15400	3	125	22000	12	713
16	10200	4	110	15600	1	42	22000	6	356
17	10200	6	165	17400	4	188	21900	4	237
18	10000	4	108	17500	18	850	22100	12	716
19	10100	14	382	17500	19	898	20400	27	1530
20	10200	4	110	17500	8	378	11000	3	89
21	10500	1	28	17500	14	661	11000	2	59
22	9640	2	52	17600	6	285	17100	4	185
23	11900	5	161	18000	8	389	25000	12	810
24	15300	6	248	20000	3	162	24900	4	269
25	15200	8	328	20100	12	651	24700	3	200
26	15400	6	249	20200	12	654	24900	3	202
27	15300	5	207	20200	25	1360	24800	2	134
28	15300	5	207	20000	4	216	24800	2	134
29	15300	2	83	19900	1	54	24600	2	133
30	15300	2	83	18800	2	102	24500	3	198
31	15300	7	289	---	---	---	24600	7	465
TOTAL	360640	---	6497	507200	---	12063	575900	---	8852

		JANUARY			FEBRUARY			MARCH	
1	24700	8	534	22000			11700		
2	24600	3	199	21800			14000		
3	24600	7	465	21800			17700		
4	24500	6	397	22000			17600		
5	24200	8	523	22000			17600		
6	24400	9	593	22000			17600		
7	24600	5	332	20200			17800		
8	24800	7	469	19300			18500		
9	25000	6	405	19300			20500		
10	24900	9	605	19300			20600		
11	24900	12	807	19300			18000		
12	24800	8	536	17800			15000		
13	24900	7	471	15400			14400		
14	24900	4	269	15300			14300		
15	24900	4	269	15300			14300		
16	24800	3	201	15300			13600		
17	24500	7	463	15300			13600		
18	24700	3	200	15300			12500		
19	20300	4	219	13900			11500		
20	19300	3	156	12700			10000		
21	25100	6	407	12700			9990		
22	24700	8	534	12600			9760		
23	24600	8	531	12900			9040		
24	24900	7	471	12900			8060		
25	24800	1	67	12700			7320		
26	24600	5	332	12600			7220		
27	24700	5	333	12500			6320		
28	24900	2	134	12100			6180		
29	24800	5	335	11800			6200		
30	24200	4	261	---			7350		
31	21900	4	237	---			12900		
TOTAL	753500	---	11755	478100			401140		

12301999 WOLF CREEK NEAR LIBBY, MT

LOCATION.--Lat 48°13'57", long 115°16'29", in NE¼NW¼SW¼ sec.35, T.29 N., R.29 W., Lincoln County, Hydrologic Unit 17010102, on right bank 1.0 mi (1.6 km) upstream from mouth and 17.0 mi (27.4 km) southeast of Libby.

DRAINAGE AREA.--216 mi^2 (559 km^2).

PERIOD OF RECORD.--August 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,544.88 ft (775.679 m) above mean sea level (Corps of Engineers bench mark).

REMARKS.--Records good except those for winter period, which are poor. Diversions for irrigation of about 62 acres (0.25 km^2) above station.

AVERAGE DISCHARGE.--9 years, 76.9 ft^3/s (2.178 m^3/s), 4.83 in/yr (123 mm/yr), 55,710 acre-ft/yr (68.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,660 ft^3/s (47.0 m^3/s) Apr. 24, 1969, gage height, 6.52 ft (1.987 m); minimum, 4.0 ft^3/s (0.11 m^3/s) Sept. 13, 14, 1973, gage height, 1.85 ft (0.564 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 905 ft^3/s (25.6 m^3/s) Apr. 13, gage height, 5.15 ft (1.570 m); minimum daily, 5.5 ft^3/s (0.16 m^3/s) Nov. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.8	8.7	6.5	14	13	10	69	258	91	34	15	10
2	6.8	8.8	7.5	16	13	8.0	79	344	87	32	14	9.6
3	7.0	9.0	9.0	16	12	9.0	69	453	80	31	13	9.1
4	8.1	8.8	25	16	10	10	80	506	77	30	13	9.0
5	7.9	8.6	70	16	7.0	11	107	491	73	29	13	8.9
6	8.1	8.6	55	15	11	13	155	472	66	27	13	8.8
7	12	9.3	45	15	14	13	252	453	63	26	14	9.2
8	13	9.0	35	15	15	12	367	480	59	27	16	9.5
9	11	8.9	36	15	15	12	499	542	55	27	16	9.5
10	9.5	8.9	37	14	13	13	522	554	51	26	15	9.3
11	9.1	8.5	33	14	13	13	554	563	51	25	14	9.3
12	9.3	8.0	27	13	14	12	724	526	49	24	13	9.9
13	8.8	8.0	24	12	14	12	858	392	48	24	13	9.6
14	9.0	8.5	21	13	14	12	767	354	48	23	13	9.4
15	8.6	8.5	21	14	14	12	592	330	47	22	14	9.1
16	8.3	9.0	21	14	14	13	468	275	49	21	15	8.8
17	8.2	9.0	19	14	14	14	378	240	69	19	16	9.5
18	8.2	8.5	17	14	13	15	321	211	85	18	16	9.1
19	8.3	8.0	18	14	13	15	287	183	68	18	14	8.9
20	8.6	7.5	18	14	13	16	260	166	58	17	13	8.4
21	9.0	7.0	18	13	13	16	258	161	53	17	13	8.2
22	10	7.0	17	13	13	18	237	144	51	17	12	8.2
23	9.9	7.5	17	14	13	20	217	131	51	16	12	8.1
24	9.2	8.0	17	14	14	22	203	159	50	16	12	8.4
25	9.1	8.0	17	14	14	24	220	173	48	17	14	8.4
26	9.8	8.0	17	14	13	26	225	142	47	17	13	8.4
27	9.4	8.0	17	14	13	28	211	123	45	15	13	8.6
28	9.4	7.5	16	14	12	30	206	112	42	14	13	8.5
29	9.0	6.5	16	14	12	34	201	103	39	13	12	8.4
30	9.0	5.5	16	14	---	37	211	95	37	15	12	8.1
31	9.0	---	16	13	---	50	---	91	---	16	11	---
TOTAL	279.4	245.1	729.0	439	376.0	550.0	9597	9227	1737	673	420	268.2
MEAN	9.01	8.17	23.5	14.2	13.0	17.7	320	298	57.9	21.7	13.5	8.94
MAX	13	9.3	70	16	15	50	858	563	91	34	16	10
MIN	6.8	5.5	6.5	12	7.0	8.0	69	91	37	13	11	8.1
CFSM	.04	.04	.11	.07	.06	.08	1.48	1.38	.27	.10	.06	.04
IN.	.05	.04	.13	.08	.06	.09	1.65	1.59	.30	.12	.07	.05
AC-FT	554	486	1450	871	746	1090	19040	18300	3450	1330	833	532

CAL YR 1975 TOTAL 23043.2 MEAN 63.1 MAX 827 MIN 5.0 CFSM .29 IN 3.97 AC-FT 45710
WTR YR 1976 TOTAL 24540.7 MEAN 67.1 MAX 858 MIN 5.5 CFSM .31 IN 4.23 AC-FT 48680

12302055 FISHER RIVER NEAR LIBBY, MT

LOCATION.--Lat 48°21'20", long 115°18'50", in NW¼NE¼NW¼ sec.21, T.30 N., R.29 W., Lincoln County, Hydrologic Unit 17010102, on left bank 0.8 mi (1.3 km) upstream from mouth and 11.4 mi (18.3 km) east of Libby.

DRAINAGE AREA.--838 mi^2 (2,170 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,134.10 ft (650.474 m) above mean sea level (Corps of Engineers bench mark).

REMARKS.--Water-discharge records good. Diversions of about 700 acres (2.8 km^2) above station.

AVERAGE DISCHARGE.--9 years, 570 ft^3/s (16.14 m^3/s), 9.24 in/yr (235 mm/yr), 413,000 acre-ft/yr (509 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,720 ft^3/s (247 m^3/s) Jan. 16, 1974, gage height, 9.29 ft (2.832 m); minimum, 53 ft^3/s (1.50 m^3/s) Jan. 12, 1975, gage height, 2.75 ft (0.838 m), result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of about May 22, 1948 reached a discharge of 6,560 ft^3/s (186 m^3/s), by slope-area measurement at site 0.5 mi (0.8 km) upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,240 ft^3/s (120 m^3/s) Dec. 5, gage height, 7.18 ft (2.188 m); minimum, 113 ft^3/s (3.20 m^3/s) Oct. 2-3, gage height, 2.99 ft (0.911 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	115	190	171	231	316	249	539	1200	996	613	216	150
2	114	183	547	234	313	191	596	1500	935	543	218	145
3	114	400	1590	301	305	201	598	1900	879	511	211	142
4	136	516	2880	311	231	241	634	2120	835	508	205	141
5	170	433	2880	333	202	212	732	2140	793	509	218	137
6	151	360	1520	302	239	240	942	2060	789	487	222	137
7	198	326	1080	284	271	248	1290	2120	831	484	218	143
8	207	292	876	274	305	234	1700	2370	918	496	220	141
9	184	263	843	271	314	236	2150	2850	1040	507	215	139
10	171	246	817	265	287	243	2320	3180	1070	452	216	135
11	166	233	760	274	274	286	2390	3700	968	411	207	134
12	166	217	692	267	300	258	2780	3070	926	400	196	134
13	164	205	586	250	328	272	3070	2430	882	411	193	132
14	161	200	506	242	345	258	2880	2510	778	377	189	131
15	159	218	521	289	330	253	2550	2260	737	350	193	129
16	166	333	392	325	314	262	2180	1970	820	334	210	128
17	158	295	348	399	310	284	1870	1870	1080	323	218	134
18	153	264	422	457	307	335	1630	1710	1010	317	201	133
19	160	239	395	473	295	376	1460	1550	922	310	189	130
20	174	230	372	452	282	381	1350	1550	900	298	190	127
21	181	204	339	438	266	382	1340	1460	857	284	221	126
22	189	212	324	416	264	378	1230	1350	761	266	197	124
23	183	216	310	429	266	389	1150	1390	726	248	187	124
24	172	210	300	379	267	384	1100	1630	680	247	182	127
25	166	237	297	383	284	397	1130	1650	633	267	181	127
26	174	226	298	358	282	389	1140	1430	583	255	182	128
27	171	215	342	359	273	380	1110	1290	531	239	180	127
28	165	197	311	356	273	377	1090	1380	522	226	173	126
29	161	186	294	341	257	372	1060	1270	537	218	164	126
30	159	152	322	333	---	377	1080	1130	581	226	159	125
31	185	---	317	324	---	436	---	1070	---	225	154	---
TOTAL	5093	7698	21652	10350	8300	9521	45091	59110	24519	11342	6125	3982
MEAN	164	257	698	334	286	307	1503	1907	817	366	198	133
MAX	207	516	2880	473	345	436	3070	3700	1080	613	222	150
MIN	114	152	171	231	202	191	539	1070	522	218	154	124
CFSM	.20	.31	.83	.40	.34	.37	1.79	2.28	.97	.44	.24	.16
IN.	.23	.34	.96	.46	.37	.42	2.00	2.62	1.09	.50	.27	.18
AC-FT	10100	15270	42950	20530	16460	18880	89440	117200	48630	22500	12150	7900

CAL YR 1975 TOTAL 194884 MEAN 534 MAX 3480 MIN 60 CFSM .64 IN 8.65 AC-FT 386600
WTR YR 1976 TOTAL 212783 MEAN 581 MAX 3700 MIN 114 CFSM .69 IN 9.45 AC-FT 422100

12302055 FISHER RIVER NEAR LIBBY, MT--Continued

WATER-QUALITY RECORDS

LOCATION.--Samples collected at bridge 0.2 mi (0.3 km) upstream from gaging station, 1.0 mi (1.6 km) upstream from mouth, and 11.6 mi (18.7 km) east of Libby.

PERIOD OF RECORD.--Water years 1967 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: September 1967 to current year.
SUSPENDED SEDIMENT DISCHARGE: September 1967 to January 1976.

INSTRUMENTATION.--Temperature recorder since September 1967.

REMARKS.--Temperature recorder at gaging station 0.2 mi (0.3 km) downstream from sampling site. Flow affected by ice during most of winter period. Flow affected by diversions for irrigation of about 700 acres (2.8 km^2) upstream from station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 25.0°C on several days during July and August, 1973; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 22.0°C on July 31, Aug. 2, 3, 6; minimum, 0.0°C on many days during December to February.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO JUNE 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)
OCT											
02...	0900	113	221	8.2	4.5	8.5	1	2	11.0	102	.7
NOV											
19...	1030	245	158	8.1	-2.0	.5	12	4	13.6	102	.5
DEC											
19...	1300	391	132	8.3	-2.0	.0	4	10	13.8	102	.6
JAN											
13...	1045	236	160	8.3	-5.0	.0	5	4	13.6	101	.5
FEB											
19...	1100	296	164	8.3	-.5	1.5	7	6	13.3	102	.5
APR											
13...	1130	3120	85	7.9	10.0	5.0	40	95	11.8	99	1.5
MAY											
10...	1230	3240	65	8.0	24.0	7.5	45	260	11.1	100	1.6
17...	1030	1890	85	8.2	9.5	8.5	8	50	11.1	102	.6
JUN											
01...	1200	1010	90	8.3	18.5	9.5	2	15	10.6	100	.8

DATE	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)
OCT											
02...	120	0	28	11	3.2	.1	.9	145	0	119	1.5
NOV											
19...	80	0	20	7.3	2.5	.1	.6	105	0	86	1.3
DEC											
19...	67	0	16	6.5	2.3	.1	.7	84	0	69	.7
JAN											
13...	88	1	22	8.1	2.6	.1	.7	107	0	88	.9
FEB											
19...	88	2	21	8.7	2.1	.1	.8	105	0	86	.8
APR											
13...	45	0	11	4.2	2.3	.2	1.1	58	0	48	1.2
MAY											
10...	38	1	9.3	3.6	1.5	.1	.7	45	0	37	.7
17...	38	0	10	3.2	1.6	.1	.6	49	0	40	.5
JUN											
01...	47	0	12	4.1	1.6	.1	.6	59	0	48	.5

12302055 FISHER RIVER NEAR LIBBY, MT--Continued

WATER QUALITY DATA, OCTOBER 1975 TO JUNE 1976

DATE	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)
OCT											
02...	5.1	.6	.1	10	130	.18	39.7	.01	.00	.01	.00
NOV											
19...	5.8	.1	.1	8.8	97	.13	64.2	.01	.01	.02	.00
DEC											
19...	4.9	.6	.1	9.3	79	.11	83.4	.06	.00	.06	.02
JAN											
13...	7.3	1.0	.2	9.7	108	.15	68.8	.03	.00	.03	.03
FEB											
19...	5.4	.7	.1	9.1	90	.12	71.9	.00	.00	.00	.02
APR											
13...	6.7	.7	.1	12	67	.09	564	.07	.00	.07	.02
MAY											
10...	3.4	.1	.1	8.6	45	.06	394	.11	.00	.11	.02
17...	3.3	.4	.0	8.7	60	.08	306	.06	.01	.07	.01
JUN											
01...	2.3	.4	.1	9.6	65	.09	177	.01	.00	.01	.01

DATE	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	CHLORO-PHYLL A (UG/L)	CHLORO-PHYLL B (UG/L)	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)
OCT											
02...	.10	.10	.01	.00	2.2	1.50	2.20	60	0	0	0
NOV											
19...	.08	.08	.00	.00	4.4	1.70	2.80	150	0	1	0
DEC											
19...	.07	.09	.00	.00	1.8	2.80	4.20	350	0	1	1
JAN											
13...	.18	.21	.00	.00	9.1	.000	.000	150	0	0	0
FEB											
19...	.09	.11	.01	.00	1.7	--	--	270	10	0	0
APR											
13...	.64	.66	.22	.00	7.7	.000	.000	4200	40	3	1
MAY											
10...	.11	.13	.15	.00	7.0	.000	.000	4100	10	6	0
17...	.22	.23	.05	.01	4.0	.000	.000	1800	50	--	0
JUN											
01...	.12	.13	.04	.01	12	.000	.000	580	0	0	0

DATE	TOTAL IRON (FE) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT										
02...	40	10	0	1	10	10	2	1	10	10
NOV										
19...	240	0	0	1	30	20	3	0	0	10
DEC										
19...	500	60	<100	1	20	10	0	0	10	0
JAN										
13...	180	20	<100	0	8	5	0	0	7	0
FEB										
19...	350	0	<100	1	30	0	0	0	20	0
APR										
13...	6400	60	<100	0	200	10	0	0	50	0
MAY										
10...	7700	30	<100	3	220	20	1	0	40	0
17...	2900	40	<100	3	80	0	0	0	80	10
JUN										
01...	950	20	2	0	20	0	1	0	10	0

12302055 FISHER RIVER NEAR LIBBY, MT--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	13.5	9.0	5.5	4.5	1.0	1.0	0.0	0.0	1.0	0.5	1.0	0.5
2	12.5	8.0	5.5	5.5	1.0	0.5	0.0	0.0	0.5	0.5	1.0	0.5
3	11.5	10.0	7.5	5.5	2.5	0.5	0.0	0.0	0.5	0.0	1.0	1.0
4	12.5	11.0	7.5	6.5	3.0	2.5	0.0	0.0	0.0	0.0	1.0	1.0
5	12.0	9.5	6.5	5.0	2.5	2.0	0.0	0.0	0.0	0.0	1.0	1.0
6	11.5	10.5	5.5	5.0	2.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0
7	10.5	9.0	5.5	5.0	2.0	1.0	0.0	0.0	0.0	0.0	2.5	1.0
8	9.0	8.0	4.5	3.5	2.5	2.0	0.0	0.0	0.0	0.0	3.5	1.0
9	8.5	8.0	4.0	3.0	3.5	2.5	0.0	0.0	0.0	0.0	4.0	2.5
10	8.5	8.0	3.0	1.5	3.5	2.5	0.0	0.0	0.0	0.0	5.0	3.5
11	10.0	8.0	2.0	0.5	2.5	1.5	0.5	0.0	0.0	0.0	4.5	2.5
12	10.0	9.5	2.0	1.0	1.5	1.0	0.5	0.0	1.0	0.0	2.5	1.0
13	10.0	8.5	1.5	0.5	1.0	0.5	0.0	0.0	1.5	1.0	4.5	1.5
14	8.5	7.0	2.5	1.5	0.5	0.5	0.0	0.0	2.5	1.5	5.0	2.0
15	9.5	7.5	4.0	2.5	0.5	0.5	0.0	0.0	2.0	1.0	4.5	1.5
16	8.5	7.0	3.5	2.5	0.5	0.0	1.5	0.0	1.5	1.0	6.0	2.5
17	10.0	8.0	2.5	2.0	0.0	0.0	2.0	1.5	1.5	1.5	6.5	4.5
18	10.0	8.5	2.0	1.0	0.0	0.0	2.0	1.0	2.0	1.0	5.5	4.5
19	8.5	7.5	1.0	0.5	0.0	0.0	1.0	0.0	2.5	1.5	5.5	3.5
20	8.0	7.0	0.5	0.5	0.0	0.0	0.0	0.0	3.0	1.0	3.5	2.5
21	7.5	6.5	0.5	0.5	0.0	0.0	0.0	0.0	2.0	0.5	4.5	2.5
22	7.5	6.0	0.5	0.5	0.0	0.0	0.0	0.0	2.5	0.5	4.5	3.0
23	6.0	5.0	1.5	0.5	1.0	0.0	0.0	0.0	3.0	1.5	5.5	3.5
24	5.0	4.0	2.5	1.5	1.5	1.0	0.0	0.0	3.5	2.5	4.5	3.0
25	4.5	4.0	2.0	1.0	2.0	1.5	0.0	0.0	4.0	3.0	5.0	3.5
26	5.0	4.5	1.5	1.0	2.0	1.5	0.0	0.0	2.5	2.0	5.0	3.5
27	5.5	4.5	1.5	1.0	2.0	1.5	1.0	0.0	2.0	1.5	5.5	3.0
28	5.0	4.0	1.0	1.0	1.5	1.0	1.5	0.5	2.0	1.0	5.5	3.5
29	4.5	4.5	1.0	1.0	1.5	1.0	1.5	1.0	2.0	0.5	7.0	4.0
30	5.5	4.5	1.0	1.0	2.0	1.5	1.5	0.5	---	---	8.0	5.0
31	5.5	4.5	---	---	2.0	0.0	1.5	0.5	---	---	6.5	5.0
MONTH	13.5	4.0	7.5	0.5	3.5	0.0	2.0	0.0	4.0	0.0	8.0	0.5

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.5	5.0	10.5	7.5	11.0	9.0	16.5	14.0	20.5	18.0	20.5	15.0
2	5.5	4.5	10.0	7.5	11.0	8.5	16.0	11.5	22.0	17.5	19.5	15.5
3	7.0	4.0	8.5	7.0	11.0	9.0	16.5	13.0	22.0	18.0	19.0	14.0
4	7.5	5.0	8.5	7.0	10.5	8.0	16.5	14.5	20.5	17.5	18.5	14.0
5	7.5	5.0	7.5	7.0	12.0	9.0	18.0	13.5	21.0	17.5	18.5	13.5
6	7.0	5.0	9.5	6.5	12.0	10.0	18.5	15.0	22.0	17.5	17.5	14.0
7	7.5	5.5	10.0	7.5	12.5	10.5	18.0	16.0	20.5	18.0	14.0	11.0
8	7.0	4.5	10.0	7.5	13.5	11.0	16.5	14.5	18.5	16.5	14.5	9.5
9	6.5	5.0	10.0	7.5	13.5	11.5	16.0	14.0	17.5	15.5	15.0	9.5
10	6.0	4.0	9.5	7.5	13.5	10.0	16.0	13.0	19.0	16.0	15.5	10.0
11	6.5	5.0	9.0	7.0	13.0	9.0	18.5	14.0	20.5	16.0	14.0	11.5
12	6.5	6.0	9.0	6.0	12.0	11.0	18.0	15.5	21.0	16.0	13.5	12.5
13	6.0	5.5	9.0	7.5	11.0	9.0	17.5	13.5	21.0	17.0	15.0	10.5
14	5.5	4.0	10.0	8.0	12.0	9.0	18.0	14.0	19.5	17.5	15.5	10.5
15	5.0	4.5	9.0	6.5	12.0	11.0	19.5	14.5	18.5	16.5	16.0	11.0
16	5.0	4.0	10.5	7.0	11.0	10.0	21.0	15.5	16.5	15.0	16.0	11.5
17	5.0	4.5	10.5	8.0	12.0	10.0	21.0	16.0	16.0	12.5	15.0	14.0
18	5.5	5.0	9.5	6.5	13.5	10.0	19.5	16.5	16.5	14.0	15.5	14.0
19	6.0	4.0	10.5	7.0	14.0	11.5	21.0	16.0	15.5	13.0	16.0	11.5
20	6.0	5.0	10.0	8.5	14.0	12.0	19.0	16.5	16.5	14.0	15.5	10.5
21	6.0	4.5	10.5	7.0	13.0	11.0	18.5	16.0	19.0	13.0	15.5	11.0
22	6.0	5.0	11.0	8.5	11.0	11.0	20.0	15.5	20.0	14.5	16.5	12.0
23	7.5	5.0	11.0	10.0	11.5	10.5	21.5	16.0	19.5	17.0	16.0	12.5
24	8.0	6.0	11.0	9.5	12.5	10.0	20.5	17.0	20.0	15.0	16.5	12.5
25	7.5	6.5	10.0	8.5	12.0	10.0	21.0	15.0	18.0	16.0	17.0	13.5
26	6.5	5.5	10.0	7.0	13.0	9.5	22.0	17.0	16.5	13.5	16.0	12.5
27	6.0	5.0	12.0	9.0	15.0	10.0	21.0	16.5	14.0	12.0	15.5	11.5
28	6.0	5.5	12.0	9.5	16.0	12.0	21.0	15.0	18.5	12.5	15.0	11.0
29	8.5	5.5	10.0	8.0	17.0	13.0	19.0	16.0	18.5	14.0	15.5	11.5
30	10.0	7.0	10.0	9.0	17.5	15.0	19.0	15.5	20.0	14.5	15.5	11.5
31	---	---	11.0	9.0	---	---	22.0	16.0	20.5	14.5	---	---
MONTH	10.0	4.0	12.0	6.0	17.5	8.0	22.0	11.5	22.0	12.0	20.5	9.5
YEAR	22.0	0.0										

12302055 FISHER RIVER NEAR LIBBY, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO JANUARY 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	115	1	.31	190	4	2.1	171	6	2.8
2	114	2	.62	183	3	1.5	547	193	427
3	114	3	.92	400	52	59	1590	1190	5110
4	136	3	1.1	516	9	13	2880	920	7150
5	170	9	4.1	433	26	30	2880	870	6770
6	151	6	2.4	360	18	17	1520	295	1210
7	198	10	5.3	326	11	9.7	1080	150	437
8	207	10	5.6	292	9	7.1	876	115	272
9	184	7	3.5	263	1	.71	843	98	223
10	171	4	1.8	246	1	.66	817	80	176
11	166	5	2.2	233	3	1.9	760	65	133
12	166	6	2.7	217	3	1.8	692	50	93
13	164	7	3.1	205	2	1.1	586	37	59
14	161	2	.87	200	2	1.1	506	25	34
15	159	4	1.7	218	9	5.4	521	26	37
16	166	3	1.3	333	25	22	392	22	23
17	158	3	1.3	295	10	8.0	348	29	27
18	153	4	1.7	264	4	2.9	422	27	31
19	160	9	3.9	239	4	2.6	395	25	27
20	174	4	1.9	230	2	1.2	372	42	42
21	181	10	4.9	204	2	1.1	339	32	29
22	189	6	3.1	212	2	1.1	324	19	17
23	183	8	4.0	216	3	1.7	310	17	14
24	172	5	2.3	210	2	1.1	300	16	13
25	166	4	1.8	237	4	2.6	297	15	12
26	174	8	3.8	226	3	1.8	298	16	13
27	171	6	2.8	215	2	1.2	342	20	18
28	165	7	3.1	197	1	.53	311	18	15
29	161	2	.87	186	2	1.0	294	14	11
30	159	2	.86	152	3	1.2	322	16	14
31	185	3	1.5	---	---	---	317	12	10
TOTAL	5093	---	75.35	7698	---	202.10	21652	---	22449.8

		JANUARY		FEBRUARY	MARCH
1	231	8	5.0		
2	234	11	6.9		
3	301	10	8.1		
4	311	9	7.0		
5	333	26	23		
6	302	22	18		
7	284	19	15		
8	274	13	9.6		
9	271	10	7.3		
10	265	10	7.2		
11	274	14	10		
12	267	11	7.9		
13	250	10	6.8		
14	242	8	5.2		
15	289	15	12		
16	325	42	37		
17	395	67	72		
18	457	67	83		
19	473	61	78		
20	452	38	46		
21	438	23	27		
22	416	19	21		
23	429	20	23		
24	379	11	11		
25	383	10	10		
26	358	8	7.7		
27	359	21	20		
28	356	20	19		
29	341	13	12		
30	333	15	13		
31	324	17	15		
TOTAL	10350	---	644.3		

12302055 FISHER RIVER NEAR LIBBY, MT--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1975 TO JANUARY 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM
DEC 05...	0830	2.0	3000	807	6540	29	61	91	96	99	100

12303000 KOOTENAI RIVER AT LIBBY, MT

LOCATION.--Lat 48°24'03", long 115°33'08", in SW¼SE¼SW¼ sec.34, T.31 N., R.31 W., Lincoln County, Hydrologic Unit 17010101, on right bank 1,800 ft (550 m) downstream from highway bridge at Libby, 0.8 mi (1.3 km) downstream from Libby Creek, and at mile 204.3 (328.7 km).

DRAINAGE AREA.--10,240 mi^2 (26,520 km^2), approximately.

PERIOD OF RECORD.--October 1910 to current year. Monthly discharge only for some periods, published in WSP 1316.

REVISED RECORDS.--WSP 1042: 1933. WSP 1246: 1912(M), 1915(M), 1916, 1918-19(M), 1924-27(M).

GAGE.--Water-stage recorder. Datum of gage is 2,041.54 ft (622.261 m) above mean sea level. Prior to Apr. 28, 1931, nonrecording gages at site 1,800 ft (550 m) upstream at different datum.

REMARKS.--Records good. Flow regulated by Lake Koocanusa since Mar. 21, 1972 (see p.616). Diversions for irrigation of about 14,500 acres (58.7 km^2) from tributaries above station in Canada and the United States.

AVERAGE DISCHARGE.--66 years, 12,250 ft^3/s (346.9 m^3/s), 16.24 in/yr (412 mm/yr), 8,875,000 acre-ft/yr (10.9 km^3/yr), adjusted for change in contents in Lake Koocanusa since Mar. 21, 1972.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 121,000 ft^3/s (3,430 m^3/s) June 21, 1916, gage height, 20.7 ft (6.31 m), present datum, derived from gage-relation study; minimum observed, 895 ft^3/s (25.3 m^3/s) Jan. 11, 1930 (result of discharge measurement).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 30,900 ft^3/s (875 m^3/s) Aug. 7, gage height, 9.00 ft (2.743 m); minimum daily, 3,970 ft^3/s (112 m^3/s) June 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11500	16000	16000	26200	23300	12200	14300	4990	5120	5760	16000	14400
2	10700	16100	14500	26100	23100	13900	14200	5640	6870	5340	19600	14000
3	10600	16600	18100	26100	23100	18300	13800	6320	8010	6290	19600	14100
4	10700	16700	19500	26100	23200	18200	13800	6620	7370	6570	19400	11200
5	10700	16300	16100	25800	23100	18200	12700	6590	4970	6540	19600	11200
6	10700	14600	13200	25900	23300	18300	10200	6520	5040	8600	22900	11200
7	11100	16200	12300	26200	21500	18400	8780	6720	7720	15300	30100	14000
8	10800	16200	11600	26300	20300	19000	9230	7370	8100	18500	25100	11800
9	10600	16200	14100	26500	20200	21300	11400	8360	10700	19000	21000	11200
10	11100	16500	17000	26500	20200	21600	12600	8930	9140	20100	23800	11100
11	10700	16200	19400	26400	20300	19400	12700	10200	8190	19800	23100	8190
12	10700	15800	21800	26300	19000	15800	13300	9230	5190	16900	20000	7800
13	10800	15800	22900	26400	16200	15200	13400	8510	4920	15100	19400	10800
14	10200	15900	23500	26500	16200	15100	12900	8480	5890	14900	19300	8930
15	10600	16000	23400	26500	16100	15100	12300	8130	5540	15400	19400	11100
16	10700	16200	23200	26500	16000	14500	8360	7400	5970	21500	19400	9110
17	10600	18000	23100	26400	16000	14500	5990	7720	6750	26100	17700	11700
18	10400	18000	23400	26600	16000	13500	5690	7190	6370	26100	17600	11100
19	10600	18000	22900	22900	15000	12700	5370	6870	5040	23100	17600	11100
20	10700	17900	11800	19500	13200	10700	5240	7050	5270	19600	19400	12900
21	11000	17900	11600	27000	13300	10700	5220	6670	6240	19300	18500	13400
22	10300	17900	15800	26600	13100	10600	4940	5540	5740	13900	18300	14400
23	12100	18200	26500	26600	13400	9750	4720	5810	5640	9840	16700	14500
24	15900	20500	26400	26700	13500	8810	4650	6540	5540	13800	16700	14500
25	15900	20700	26200	26700	13400	8040	4720	6270	5370	18000	16000	14300
26	16000	20900	26300	26400	13300	7860	4720	5760	3970	17400	15100	8780
27	15900	20800	26300	26500	13100	7170	4700	5540	4130	15800	15400	9600
28	15800	20700	26300	26700	12600	6820	4700	5840	5370	17300	19300	9600
29	15800	20500	26100	26600	12300	6800	4670	5240	5270	17600	18500	7800
30	15800	19600	26100	26100	---	7250	4700	5140	5540	19100	16400	10100
31	15900	---	26100	23300	---	14100	---	5020	---	15600	17400	---
TOTAL	374900	526900	631500	804900	503300	423800	264000	212210	184980	488140	598300	343910
MEAN	12090	17560	20370	25960	17360	13670	8800	6845	6166	15750	19300	11460
MAX	16000	20900	26500	27000	23300	21600	14300	10200	10700	26100	30100	14500
MIN	10200	14600	11600	19500	12300	6800	4650	4990	3970	5340	15100	7800
AC-FT	743600	1045000	1253000	1597000	998300	840600	523600	420900	366900	968200	1187000	682100
MEAN†	6336	7226	8717	5025	4664	4694	12080	40530	31510	28020	18980	10300
CFSM†	.62	.71	.85	.49	.46	.46	1.18	3.96	3.08	2.74	1.85	1.01
IN†	.71	.79	.98	.57	.49	.53	1.32	4.56	3.43	3.16	2.14	1.12
AC-FT†	389600	430000	536000	309000	268300	288600	718600	2492000	1875000	1723000	1167000	613100

OBSERVED

CAL YR 1975	TOTAL	4147490	MEAN	11360	MAX	26500	MIN	2430	AC-FT	8230000
WTR YR 1976	TOTAL	5356840	MEAN	14640	MAX	30100	MIN	3970	AC-FT	10630000

ADJUSTED

CAL YR 1975	TOTAL	4557146	MEAN	12490	CFSM	1.22	IN	16.55	AC-FT	9039000
WTR YR 1976	TOTAL	5450062	MEAN	14890	CFSM	1.45	IN	19.79	AC-FT	10810000

† Adjusted for change in contents in Lake Koocanusa

12303100 FLOWER CREEK NEAR LIBBY, MT

LOCATION.--Lat 48°20'41", long 115°36'20", in NW¼SE¼SE¼ sec.19, T.30 N., R.31 W., Lincoln County, Hydrologic Unit 17010101, Kootenai National Forest, on left bank 30 ft (9 m) downstream from road bridge, 0.3 mi (0.5 km) upstream from South Fork, 1.0 mi (1.6 km) upstream from Lake Koocanusa, 4.0 mi (6.4 km) southwest of Libby, and 4.5 mi (7.2 km) upstream from mouth.

DRAINAGE AREA.--11.1 mi^2 (28.7 km^2).

PERIOD OF RECORD.--September 1960 to current year.

REVISED RECORDS.--WDR MT 1972: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 2,866 ft (874 m), from topographic map.

REMARKS.--Records good except those for winter period, which are poor.

AVERAGE DISCHARGE.--16 years, 28.5 ft^3/s (0.807 m^3/s), 34.86 in/yr (885 mm/yr), 20,630 acre-ft/yr (25.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 709 ft^3/s (20.1 m^3/s) Jan. 16, 1974, gage height, 5.53 ft (1.686 m); maximum gage height, 6.10 ft (1.859 m) Jan. 15, 1974 (backwater from ice); minimum discharge, 3.6 ft^3/s (0.10 m^3/s) Mar. 27, 1975; minimum gage height, 1.35 ft (0.411 m) Jan. 11, 1975.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft^3/s (5.66 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 4	1200	218	6.17	3.52	1.073	May 11	0100	*254	7.19	*3.68	1.122

Minimum daily discharge, 6.0 ft^3/s (0.17 m^3/s) Feb. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.6	12	15	10	12	8.4	9.2	31	62	94	20	14
2	6.4	17	30	11	11	7.5	9.2	49	54	74	20	13
3	7.0	30	65	11	9.0	8.0	9.2	63	49	68	19	13
4	20	36	146	12	7.0	8.4	9.8	65	45	72	19	12
5	15	34	85	12	6.0	8.2	12	64	44	70	19	12
6	19	30	52	12	7.0	7.8	19	65	50	73	18	12
7	21	27	40	12	7.5	7.4	28	90	69	77	18	12
8	18	24	34	12	8.0	7.0	38	124	90	87	19	11
9	15	21	41	12	8.6	7.0	51	145	118	85	19	11
10	14	19	41	11	8.4	7.2	48	158	113	68	18	10
11	15	19	33	11	8.2	7.4	55	183	93	59	17	9.8
12	15	17	30	11	8.6	7.2	69	113	93	59	16	9.6
13	14	17	27	10	8.8	7.2	63	112	76	60	15	9.4
14	13	16	24	10	9.0	7.0	50	134	65	53	15	9.2
15	13	26	21	11	9.0	7.0	41	105	65	49	15	9.0
16	12	25	19	12	9.0	7.0	33	98	99	45	17	8.8
17	12	22	18	13	9.0	7.2	29	106	154	45	15	9.4
18	14	18	17	13	9.0	7.4	26	93	124	43	15	9.4
19	14	14	16	12	9.0	7.4	24	92	118	40	14	9.2
20	15	12	16	11	8.8	7.6	23	99	119	38	18	8.8
21	14	10	15	10	8.4	7.6	23	81	105	36	17	8.6
22	14	12	14	11	8.2	7.6	21	83	92	32	16	8.6
23	13	14	14	11	8.0	7.6	20	109	87	30	19	8.4
24	12	15	13	10	8.2	7.8	20	124	77	28	20	8.4
25	12	14	13	9.0	8.6	8.0	22	109	69	27	20	8.2
26	12	13	13	9.0	8.6	8.0	21	83	58	26	21	8.2
27	12	12	13	10	8.6	8.0	21	90	54	24	19	8.0
28	12	11	12	10	8.6	8.0	20	113	63	23	18	8.0
29	11	10	12	11	8.6	8.0	20	85	76	21	17	7.8
30	13	9.0	13	11	---	7.8	23	74	98	22	16	7.6
31	14	---	11	12	---	8.2	---	69	---	21	15	---
TOTAL	418.0	556.0	913	343.0	248.7	235.9	857.4	3009	2479	1549	544	294.4
MEAN	13.5	18.5	29.5	11.1	8.58	7.61	28.6	97.1	82.6	50.0	17.5	9.81
MAX	21	36	146	13	12	8.4	69	183	154	94	21	14
MIN	6.4	9.0	11	9.0	6.0	7.0	9.2	31	44	21	14	7.6
CFSM	1.22	1.67	2.66	1.00	.77	.69	2.58	8.75	7.44	4.50	1.58	.88
IN.	1.40	1.86	3.06	1.15	.83	.79	2.87	10.08	8.31	5.19	1.82	.99
AC-FT	829	1100	1810	680	493	468	1700	5970	4920	3070	1080	584

CAL YR 1975 TOTAL 10670.4 MEAN 29.2 MAX 196 MIN 4.0 CFSM 2.63 IN 35.76 AC-FT 21160
WTR YR 1976 TOTAL 11447.4 MEAN 31.3 MAX 183 MIN 6.0 CFSM 2.82 IN 38.36 AC-FT 22710

12303400 ROSS CREEK NEAR TROY, MT

LOCATION.--Lat 48°12'26", long 115°52'08", in SE¼NE¼ sec.8, T.28 N., R.33 W., Lincoln County, Hydrologic Unit 17010101, at bridge on Forest Service Road, 11.3 mi (18.2 km) north of Heron, 17.5 mi (28.2 km) south of Troy.

DRAINAGE AREA.--23.8 mi^2 (61.6 km^2).

PERIOD OF RECORD.--Water years 1971, July to September 1976.

WATER QUALITY DATA, JULY TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
JUL											
15...	0830	91	32	8.2	14.0	6.5	0	11.5	102	20	0
AUG											
18...	1300	34	46	7.3	14.0	7.5	0	11.2	100	23	0
SEP											
21...	1530	34	45	7.9	17.5	8.0	0	11.0	102	24	7

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
JUL											
15...	5.4	1.5	.3	.0	.2	24	0	1.8	.2	.1	3.9
AUG											
18...	6.8	1.5	.4	.0	.2	29	0	1.3	.1	.0	4.6
SEP											
21...	7.1	1.6	.5	.0	.2	21	0	7.5	.1	.1	4.6

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)
JUL											
15...	25	.03	6.14	.14	.00	.02	.02	.16	.01	0	0
AUG											
18...	29	.04	2.66	.06	.00	.00	.00	.06	.00	--	4
SEP											
21...	32	.04	2.94	.08	.00	.11	.11	.19	.00	--	1

DATE	DISSOLVED BORON (B) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)
JUL										
15...	0	<10	0	0	0	<10	1	40	20	<100
AUG										
18...	0	--	0	--	10	--	0	--	20	--
SEP										
21...	4	--	0	--	0	--	0	--	30	--

DATE	DISSOLVED LEAD (PB) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED MERCURY (HG) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)	CYANIDE (CN) (MG/L)
JUL										
15...	0	10	0	.0	.3	0	1	20	0	.00
AUG										
18...	0	--	0	--	.0	--	0	--	0	.00
SEP										
21...	1	--	10	--	.0	--	0	--	0	.00

12303400 ROSS CREEK NEAR TROY, MT--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, JULY TO SEPTEMBER 1976

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
JUL					
15...	0830	6.5	91	2	.49
AUG					
18...	1300	7.5	34	2	.18
SEP					
21...	1530	8.0	34	2	.18

12303430 STANLEY CREEK NEAR TROY, MT

LOCATION.--Lat 48°17'18", long 115°51'53", in SE¼NW¼SE¼ sec.7, T.29 N., R.33 W., Lincoln County, Hydrologic Unit 17010101, at private bridge, 0.7 mi (1.1 km) from mouth, and 12.1 mi (19.5 km) south of Troy.

DRAINAGE AREA.--12.8 mi^2 (33.2 km^2).

PERIOD OF RECORD.--July to September 1976.

WATER QUALITY DATA, JULY TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)
JUL											
14...	1230	147	60	8.2	19.5	7.5	0	11.3	103	35	1
AUG											
17...	1200	96	64	8.1	16.0	7.5	1	11.2	102	33	1
SEP											
21...	1000	66	55	7.6	16.0	7.0	0	11.4	104	29	6

DATE	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)
JUL											
14...	9.9	2.4	.4	.0	.2	41	0	2.6	.5	.1	5.1
AUG											
17...	9.5	2.3	.5	.0	.2	39	0	4.6	.4	.1	5.3
SEP											
21...	8.3	2.1	.5	.0	.2	29	0	3.5	.1	.0	5.1

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)
JUL											
14...	41	.06	16.3	.07	.00	.02	.02	.09	.01	0	0
AUG											
17...	42	.06	10.9	.08	.00	.00	.00	.08	.01	--	0
SEP											
21...	34	.05	6.06	.09	.00	.09	.09	.18	.00	--	0

DATE	DISSOLVED BORON (B) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)
JUL										
14...	2	<10	0	0	0	<10	1	0	0	<100
AUG										
17...	6	--	0	--	0	--	2	--	0	--
SEP										
21...	0	--	0	--	0	--	1	--	10	--

12303430 STANLEY CREEK NEAR TROY, MT--Continued

WATER QUALITY DATA, JULY TO SEPTEMBER 1976

DATE	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)	CYANIDE (CN) (MG/L)
JUL										
14...	0	0	0	.0	.3	0	0	0	0	--
AUG										
17...	1	--	0	--	.0	--	0	--	0	.00
SEP										
21...	2	--	0	--	.0	--	0	--	0	.00

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, JULY TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
JUL					
14...	1230	7.5	147	2	.79
AUG					
17...	1200	7.5	96	3	.78
SEP					
21...	1000	7.0	66	3	.53

12303490 LAKE CREEK NEAR TROY, MT

LOCATION.--Lat 48°22'54", long 115°51'31", on N½ of line between sec. 7 and 8, T.30 N., R.33 W., Lincoln County, Hydrologic Unit 17010101, at bridge on Chase Cutoff Road, 0.1 mi (0.2 km) downstream from Iron Creek and 5.7 mi (9.2 km) southeast of Troy.

DRAINAGE AREA.--188.3 mi^2 (487.7 km^2).

PERIOD OF RECORD.--July to September 1976.

WATER QUALITY DATA, JULY TO SEPTEMBER 1976

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	AIR TEMPER-ATURE (DEG C)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	PER-CENT SATUR-ATION	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)
JUL											
14...	1600	560	50	8.0	26.0	15.0	1	9.2	105	30	1
AUG											
18...	0900	255	68	7.9	12.0	10.0	1	10.2	99	38	5
SEP											
21...	1300	179	76	7.9	22.5	11.0	0	10.6	105	39	7

DATE	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	SODIUM AD-SORP-TION RATIO	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)
JUL											
14...	8.6	2.1	.7	.1	.4	35	0	1.9	.4	.1	5.5
AUG											
18...	11	2.6	.8	.1	.4	41	0	3.1	.2	.1	6.3
SEP											
21...	11	2.9	.9	.1	.4	40	0	3.8	.2	.0	6.1

12303490 LAKE CREEK NEAR TROY, MT--Continued

WATER QUALITY DATA, JULY TO SEPTEMBER 1976

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)
JUL											
14...	37	.05	55.9	.01	.01	.01	.02	.03	.01	0	1
AUG											
18...	45	.06	31.0	.06	.00	.00	.00	.06	.00	--	1
SEP											
21...	45	.06	21.7	.04	.00	.09	.09	.13	.00	--	1

DATE	DIS-SOLVED BORON (B) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)
JUL										
14...	4	<10	0	0	10	<10	1	150	70	<100
AUG										
18...	0	--	0	--	0	--	0	--	20	--
SEP										
21...	2	--	0	--	0	--	1	--	20	--

DATE	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)	CYANIDE (CN) (MG/L)
JUL										
14...	0	10	0	.0	.1	0	0	0	0	.01
AUG										
18...	0	--	0	--	.0	--	0	--	0	.00
SEP										
21...	2	--	0	--	.0	--	0	--	0	.00

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, JULY TO SEPTEMBER 1976

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
JUL					
14...	1600	15.0	560	6	9.1
AUG					
18...	0900	10.0	255	3	2.1
SEP					
21...	1300	11.0	179	4	1.9

12304500 YAAK RIVER NEAR TROY, MT

LOCATION.--Lat 48°33'43", long 115°58'09", in NE¼SE¼SE¼ sec.5, T.32 N., R.34 W., Lincoln County, Hydrologic Unit 17010103, Kootenai National Forest, on right bank 500 ft (150 m) upstream from bridge on U.S. Highway 2, 0.2 mi (0.3 km) upstream from mouth, and 7.7 mi (12.4 km) northwest of Troy.

DRAINAGE AREA.--766 mi^2 (1,984 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1910 to September 1916 (fragmentary record), March 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,839.2 ft (560.59 m) above mean sea level. Oct. 15, 1910, to Sept. 30, 1916, nonrecording gage at several sites within 11 mi (18 km) of present site at various datums.

REMARKS.--Water-discharge records good. Diversions for irrigation of about 30 acres (0.12 km^2) above station.

AVERAGE DISCHARGE.--20 years, 951 ft^3/s (26.93 m^3/s), 16.86 in/yr (428 mm/yr), 689,000 acre-ft/yr (850 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,100 ft^3/s (343 m^3/s) May 21, 1956, gage height, 9.70 ft (2.957 m), in gage well, 10.8 ft (3.29 m), from outside gage; minimum daily, 50 ft^3/s (1.42 m^3/s) Dec. 9, 1972.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May to June 1948 reached a stage of 11.0 ft (3.35 m) from floodmarks; discharge, 12,500 ft^3/s (354 m^3/s). Flood in May 1954 reached a stage of 11.4 ft (3.47 m) from floodmarks; discharge, 13,400 ft^3/s (379 m^3/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5,000 ft^3/s (142 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 4	1445	9520	270	8.76	2.670	May 11	0415	*10,200	289	*8.96	2.731
Apr. 13	0130	5170	146	7.36	2.243						

Minimum discharge, 125 ft^3/s (3.54 m^3/s) Oct. 1, gage height, 3.10 ft (0.945 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	125	358	250	452	395	288	513	2590	2020	1130	296	301
2	128	367	450	482	389	229	582	3440	1850	1010	288	281
3	131	546	2840	504	387	276	581	4170	1710	915	287	265
4	221	711	7510	505	277	284	683	4590	1590	804	282	254
5	229	697	5100	509	256	288	930	4660	1540	861	280	245
6	264	606	2470	485	326	314	1330	4720	1500	811	291	244
7	288	540	1760	464	370	314	1950	5230	1670	777	336	246
8	310	480	1440	451	399	297	2610	6130	1710	843	400	238
9	272	445	1530	440	396	288	3290	7000	1930	843	432	230
10	252	406	1730	430	368	288	3140	7640	1900	735	372	223
11	293	367	1500	435	356	319	3040	9210	1720	663	322	217
12	293	350	1250	420	368	301	4650	7720	1670	631	297	214
13	272	350	949	350	357	306	4840	6360	1590	650	272	213
14	248	336	879	300	360	288	4070	5940	1460	588	276	206
15	256	606	886	350	348	284	3360	5160	1410	542	290	199
16	260	810	704	400	347	284	2710	4650	1740	509	341	193
17	244	657	575	481	342	293	2310	4530	2180	484	362	189
18	244	496	677	496	338	332	2050	4000	2010	458	330	191
19	264	367	726	481	327	358	1880	3700	1800	437	294	194
20	288	314	684	446	318	363	1810	3950	1680	425	341	187
21	280	288	613	406	310	350	1800	3570	1500	410	338	180
22	280	345	561	417	309	350	1690	3290	1490	385	306	175
23	260	391	548	461	308	372	1590	3540	1480	367	383	176
24	244	410	554	413	315	380	1560	3820	1330	347	432	173
25	240	363	560	419	333	378	1760	3700	1340	335	382	175
26	248	363	548	406	318	371	1740	3140	1300	320	513	176
27	244	323	572	452	311	364	1660	2900	1180	301	511	171
28	252	276	532	430	312	360	1750	3170	1100	289	438	168
29	244	210	506	434	301	356	1760	2750	1100	281	384	163
30	284	190	649	421	---	360	2000	2420	1140	287	349	161
31	406	---	609	408	---	414	---	2230	---	302	322	---
TOTAL	7864	12968	40162	13548	9841	10049	64239	139920	47820	17820	10747	6248
MEAN	254	432	1296	437	339	324	2141	4514	1594	575	347	208
MAX	406	810	7510	509	399	414	4840	9210	2180	1130	513	301
MIN	125	190	250	300	256	229	513	2230	1100	281	272	161
CFSM	.33	.56	1.69	.57	.44	.42	2.80	5.89	2.08	.75	.45	.27
IN.	.38	.63	1.95	.66	.48	.49	3.12	6.80	2.32	.87	.52	.30
AC-FT	15600	25720	79660	26870	19520	19930	127400	277500	94850	35350	21320	12390

CAL YR 1975 TOTAL 356110 MEAN 976 MAX 7510 MIN 123 CFSM 1.27 IN 17.29 AC-FT 706300
WTR YR 1976 TOTAL 381226 MEAN 1042 MAX 9210 MIN 125 CFSM 1.36 IN 18.51 AC-FT 756200

12304500 YAAK RIVER NEAR TROY, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963-73, 1975 to current year.

INSTRUMENTATION.--Temperature recorder since March 25, 1976; seasonally (spring, summer, fall) 1963-73, 1975.

REMARKS.--Flow not regulated and only slightly affected by diversions for irrigation of 30 acres (121,000 m^2) upstream from station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 25.0°C Aug. 8, 1971.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 19.5°C Aug. 4.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	13.5	10.0	5.5	4.5								
2	13.0	10.0	5.5	5.5								
3	11.0	10.5	6.5	5.5								
4	11.0	11.0	6.5	6.0								
5	11.0	10.0	6.0	5.5								
6	10.0	10.0	6.0	5.5								
7	10.0	9.5	5.5	5.0								
8	9.5	9.0	5.0	4.0								
9	9.0	8.5	4.0	3.5								
10	8.5	8.5	3.5	2.0								
11	9.0	8.5	2.0	1.5								
12	9.0	8.5	2.0	1.5								
13	8.5	8.0	2.0	1.5								
14	8.0	8.0	2.0	1.5								
15	8.0	8.0	3.5	2.0								
16	8.5	7.0	3.5	3.0								
17	8.5	7.0	3.5	3.0								
18	9.0	8.5	3.0	1.0								
19	9.0	8.0	1.0	0.0								
20	8.0	7.0	---	---								
21	7.0	6.5	---	---								
22	6.5	6.0	---	---								
23	6.0	5.0	---	---								
24	5.0	4.5	---	---								
25	4.5	4.0	---	---								
26	4.0	3.5	---	---								
27	4.5	4.0	---	---								
28	4.5	4.5	---	---								
29	4.5	4.5	---	---								
30	4.5	4.5	---	---								
31	4.5	4.5	---	---								
MONTH	13.5	3.5	---	---								

12304500 YAAK RIVER NEAR TROY, MT--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1			---	---	8.0	7.0	14.5	13.5	18.5	18.0	16.0	15.5
2			---	---	8.0	7.0	13.5	11.5	19.0	17.0	16.0	15.5
3			---	---	8.0	7.0	14.0	12.0	19.0	18.5	16.0	13.5
4			---	---	8.5	7.0	13.5	13.5	19.5	18.5	---	---
5			---	---	9.5	8.0	14.5	13.0	19.0	18.5	---	---
6			---	---	9.5	8.5	15.0	14.0	19.5	18.0	---	---
7			---	---	9.5	9.0	15.0	15.0	19.5	19.0	---	---
8			---	---	10.0	9.0	15.0	14.0	19.0	16.0	13.0	11.0
9			---	---	10.5	10.0	15.0	14.0	16.5	15.5	11.5	11.0
10			---	---	10.5	9.5	15.0	13.5	16.0	15.5	13.0	11.5
11			---	---	10.0	9.0	---	14.5	16.0	16.0	13.0	12.0
12			---	---	10.0	10.0	---	---	17.5	17.0	13.0	13.0
13			8.0	6.5	10.0	9.0	---	---	18.0	17.5	13.0	11.5
14			7.0	7.0	10.0	9.0	---	---	18.0	18.0	13.0	12.0
15			7.0	6.0	10.0	10.0	---	---	16.5	16.0	14.0	13.0
16			7.0	6.5	10.0	10.0	---	---	16.0	15.0	14.0	13.5
17			7.0	7.0	10.5	9.5	---	---	15.0	13.5	14.5	14.0
18			7.0	6.0	11.5	10.0	---	---	14.0	13.5	15.0	14.0
19			8.0	6.5	11.5	11.0	---	---	14.0	13.5	14.5	13.5
20			8.0	7.0	11.5	11.0	---	---	14.0	13.5	14.0	13.0
21			7.0	6.5	11.5	11.0	---	---	15.0	13.5	14.0	13.0
22			8.5	7.0	11.0	10.5	17.0	15.5	15.5	14.5	14.0	13.5
23			9.0	8.5	10.5	10.0	18.5	16.0	17.0	15.5	14.5	13.5
24			9.0	8.5	10.0	9.0	18.5	18.0	17.0	15.0	15.0	14.0
25			8.5	8.0	---	8.5	19.0	16.5	16.0	15.5	15.0	14.0
26			8.0	6.5	9.5	9.0	19.0	18.0	15.5	13.5	14.5	14.0
27			9.0	7.0	11.0	9.0	19.0	17.0	13.5	11.5	14.0	13.0
28			9.0	8.5	13.0	10.5	18.5	16.0	13.5	12.0	13.5	12.0
29			8.5	8.0	13.5	11.5	18.0	16.5	15.0	13.5	14.0	13.0
30			8.5	8.0	14.5	13.5	16.5	16.0	15.5	14.0	14.0	13.0
31			8.0	7.0	---	---	18.5	16.0	16.0	15.0	---	---
MONTH			---	---	14.5	7.0	---	---	19.5	11.5	16.0	11.0
YEAR	19.5	0.0										

12305000 KOOTENAI RIVER AT LEONIA, ID

LOCATION.--Lat 48°37'04", long 116°02'47", in NW¼NW¼ sec.20, T.33 N., R.34 W., Principal meridian, Lincoln County, MT, Hydrologic Unit 17010104, on right bank at Leonia, 450 ft (137 m) east of Montana-Idaho State line, 0.5 mi (0.8 km) upstream from Boulder Creek, and at mile 171.6 (276.1 km).

DRAINAGE AREA.--11,740 mi^2 (30,407 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1928 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,790.25 ft (545.668 m) above mean sea level. Prior to Oct. 1, 1970, at datum 90 ft (27 m) lower. Prior to Nov. 13, 1928, nonrecording gage on bridge 250 ft (76 m) upstream at datum 90.41 ft (27.557 m) lower.

REMARKS.--Water-discharge records excellent except those for September, which are fair. Diversions above station for irrigation of about 14,600 acres (5,900 hm^2). Flow regulated by Libby Dam since Mar. 18, 1972 (see p. 616). Corps of Engineers radio telemeter at station.

AVERAGE DISCHARGE.--48 years, 14,130 ft^3/s (400.2 m^3/s), 16.34 in/yr (415 mm/yr), 10,240,000 acre-ft/yr (12.6 km^3/yr),

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 123,000 ft^3/s (3,480 m^3/s) May 28, 1948, gage height, 33.40 ft (10.180 m); minimum, 996 ft^3/s (28.2 m^3/s) Dec. 9, 1936; minimum gage height, 7.56 ft (2.304 m) Dec. 10, 1929.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of June 1894 and 1916 reached stages of 34.6 ft (70.55 m) and 31.6 ft (9.63 m), respectively, present datum, from information by Great Northern Railway.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 51,800 ft^3/s (1,467 m^3/s) Dec. 4, gage height, 22.43 ft (6.837 m); minimum, 5,730 ft^3/s (162 m^3/s) Mar. 29-30, gage height, 11.13 ft (3.392 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11900	17200	17400	28900	25000	13300	15700	10000	10300	8910	16500	16200
2	11700	17400	16600	28800	24800	13500	15900	11900	10300	8290	20400	14900
3	11400	18500	25400	29000	24700	19000	15300	13900	13100	9160	20500	15500
4	11700	19100	43700	28800	24500	19100	15600	15100	11500	9350	20200	13100
5	11800	18600	30500	28600	24300	19000	15800	15400	9460	9270	20400	12200
6	11800	16800	20400	28500	24500	19100	13100	15300	9210	10100	22500	12100
7	12100	17800	17700	28800	23600	19300	13300	16600	11500	15800	33100	13900
8	12100	17900	16200	28900	21400	19300	14000	18900	12700	20700	28500	11900
9	11800	17900	17500	29200	21400	22100	17700	22100	14200	21200	22300	10200
10	12000	17900	21400	29200	21300	22700	18500	24400	16100	22300	25100	10000
11	11900	17700	22600	29200	21300	21800	19800	29600	13000	21900	23500	7800
12	11800	17200	26100	29000	21100	16900	22300	24400	10600	19900	21500	4920
13	11800	17100	26200	28800	17600	16200	22900	20900	9580	17300	20200	7000
14	11500	17200	27000	29100	17400	16100	21000	20200	9620	16900	20100	7510
15	11500	18200	27200	29200	17300	16100	19200	18700	9530	16700	20200	8820
16	11700	18500	26300	29200	17300	15600	16000	17200	10600	22200	20400	7660
17	11700	19800	25800	29300	17300	15500	11300	17600	12400	28200	18700	9450
18	11500	19700	26200	29500	17200	14800	10400	15900	11900	28900	18400	9750
19	11600	19400	26600	28900	16700	14500	9770	15000	10400	26600	18400	9620
20	11800	19300	16000	18300	14400	12200	9510	15400	9950	21200	20300	11200
21	12000	19200	13800	29500	14500	12000	9440	14400	10300	20900	19400	14900
22	12100	19400	14900	29200	14300	12000	9030	12700	9970	16700	19100	14700
23	11600	19400	29500	29300	14400	11200	8610	13300	9750	11700	18800	14800
24	16700	21900	29500	29300	14600	10300	8370	14900	9340	13200	17200	14800
25	16800	22300	29400	29300	14800	9930	8720	14400	9070	19900	17400	14800
26	17000	22500	29500	28900	14500	9460	8690	12900	7980	17600	16500	10700
27	16800	22300	29600	29100	14400	9200	8510	12200	7300	17700	14700	9400
28	16800	22100	29400	29500	13800	8270	8630	13100	7870	17500	20300	9300
29	16800	21800	29100	29300	13500	8210	8610	11800	8400	18600	19900	9200
30	17000	21600	29400	29200	---	8310	9020	11000	8770	19900	16800	9100
31	17300	---	29300	25200	---	13800	---	10500	---	17200	18400	---
TOTAL	406000	575700	770200	887000	541900	458780	404710	499700	314700	545780	629700	335430
MEAN	13100	19190	24850	28610	18690	14800	13490	16120	10490	17610	20310	11180
MAX	17300	22500	43700	29500	25000	22700	22900	29600	16100	28900	33100	16200
MIN	11400	16800	13800	18300	13500	8210	8370	10000	7300	8290	14700	4920
AC-FT	805300	1142000	1528000	1759000	1075000	910000	802700	991200	624200	1083000	1249000	665300

CAL YR 1975 TOTAL 5130680 MEAN 14060 MAX 43700 MIN 3160 AC-FT 10180000
WTR YR 1976 TOTAL 6369600 MEAN 17400 MAX 43700 MIN 4920 AC-FT 12630000

12305000 KOOTENAI RIVER AT LEONIA, ID--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966-67, 1969 to current year.

PERIOD OF DAILY RECORD.--
Water Temperatures: July 1962 to May 1963, April 1965 to current year.

REMARKS.--No temperature record October 1 to November 19, 1976.

EXTREMES FOR PERIOD OF DAILY RECORD.--
Water Temperatures: Maximum, 20.5°C July 10, 11, 1975; Minimum, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
Water Temperatures: Maximum, 15.0°C June 30; Minimum, 1.0°C March 2, 5, 12.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE (DEG C)	AIR TEMPERATURE (DEG C)
OCT					
03...	0905	11400	216	10.5	15.0
NOV					
20...	0915	19200	142	8.5	1.0
JAN					
06...	1005	27200	209	6.0	1.5
FEB					
17...	1005	17600	174	4.0	2.0
APR					
06...	0930	12600	214	4.0	7.0
JUN					
04...	1010	8770	171	8.0	16.0
JUL					
07...	0945	22100	145	12.0	15.0

12305000 KOOTENAI RIVER AT LEONIA, ID--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1			---	---	8.0	7.5	5.5	5.5	4.5	4.0	3.0	2.0
2			---	---	8.5	7.5	5.5	5.5	4.5	4.0	1.5	1.0
3			---	---	7.0	6.0	5.5	5.5	4.0	3.5	2.0	1.5
4			---	---	6.0	4.5	6.0	5.5	3.5	3.0	2.0	1.5
5			---	---	4.5	4.0	6.0	5.5	3.5	3.0	2.0	1.0
6			---	---	5.0	4.5	6.0	5.5	4.0	3.5	3.0	1.5
7			---	---	6.0	5.0	6.0	5.5	4.0	3.0	3.0	2.0
8			---	---	6.5	6.0	6.0	5.5	4.0	4.0	3.0	2.0
9			---	---	7.5	6.5	6.0	5.5	4.0	3.5	3.0	2.0
10			---	---	7.5	7.0	6.0	5.5	4.0	4.0	2.5	2.5
11			---	---	7.0	6.5	6.0	5.5	4.5	4.0	2.5	2.0
12			---	---	6.5	6.5	6.0	5.5	4.0	4.0	2.0	1.0
13			---	---	6.5	6.0	5.5	5.5	4.0	4.0	2.5	2.0
14			---	---	6.5	6.5	5.5	5.0	4.0	4.0	2.5	2.0
15			---	---	7.0	6.5	6.0	5.5	4.0	3.5	3.0	1.5
16			---	---	6.5	6.0	6.0	5.5	4.0	3.5	3.0	2.0
17			---	---	7.0	6.5	6.0	5.5	3.5	3.5	3.5	3.0
18			---	---	7.0	6.5	5.5	5.5	3.5	3.5	3.5	3.0
19			---	---	7.0	7.0	5.5	5.0	4.0	3.5	3.0	2.5
20			9.0	8.5	7.0	6.0	5.0	4.5	4.0	3.5	3.0	2.0
21			9.0	8.0	6.0	5.5	5.0	4.5	4.0	3.0	3.0	2.5
22			9.0	8.5	6.0	5.5	5.0	4.5	3.5	3.0	3.0	3.0
23			9.0	9.0	7.0	6.5	4.5	4.5	3.5	3.0	3.5	3.0
24			9.5	9.0	7.0	7.0	4.5	4.0	4.0	3.5	3.0	2.5
25			9.0	8.5	7.0	7.0	4.5	4.0	3.5	3.5	3.5	2.5
26			9.0	8.5	7.0	7.0	4.5	4.0	3.5	3.0	3.0	2.5
27			9.0	8.5	7.0	6.5	5.0	4.5	3.0	2.5	3.5	2.5
28			8.5	8.0	6.5	6.5	5.0	4.5	3.0	2.5	4.5	3.0
29			8.0	8.0	6.5	6.5	5.0	4.5	3.0	2.5	4.5	3.5
30			8.0	7.5	6.5	6.5	5.0	4.5	---	---	5.0	3.5
31			---	---	6.5	5.5	4.5	4.5	---	---	4.5	3.0
MONTH			---	---	8.5	4.0	6.0	4.0	4.5	2.5	5.0	1.0

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	4.0	3.5	8.5	6.5	8.5	7.5	14.0	12.5	12.5	10.5	13.0	11.5
2	3.5	3.0	7.5	6.5	9.0	8.0	13.5	11.0	11.5	10.0	12.0	11.0
3	4.0	2.0	7.5	6.0	8.5	7.5	13.0	11.5	12.0	10.5	11.5	10.5
4	4.5	3.0	7.0	6.0	8.5	7.0	12.5	11.5	12.0	10.5	11.5	11.0
5	4.5	3.5	6.0	5.5	10.0	7.5	13.0	11.5	12.0	10.0	12.0	11.0
6	4.5	4.0	8.0	5.5	11.0	9.0	13.5	12.5	12.0	10.5	12.0	10.5
7	5.5	4.5	8.5	6.5	10.0	9.5	12.5	10.0	12.0	10.0	11.5	10.0
8	5.0	4.0	8.5	6.5	10.5	9.0	10.0	8.5	11.0	10.0	11.5	11.0
9	4.5	3.5	8.5	6.5	11.5	9.5	10.0	8.5	11.5	10.0	11.5	10.5
10	5.0	3.5	8.0	7.0	10.0	8.5	10.0	8.5	11.5	10.5	11.0	10.0
11	5.5	3.5	7.5	6.0	10.0	8.0	10.5	8.5	12.0	10.5	11.5	10.0
12	5.0	4.0	7.5	5.5	10.0	9.0	10.5	9.0	12.5	10.5	10.5	9.5
13	5.0	4.0	8.0	6.5	9.0	8.5	11.0	9.5	12.5	10.5	11.5	9.5
14	4.5	3.5	7.5	7.0	11.0	8.5	11.0	9.5	12.0	11.0	11.5	10.5
15	4.5	3.5	8.0	6.0	10.5	10.0	11.5	9.5	11.5	10.5	11.5	10.5
16	4.5	3.5	9.0	7.0	11.0	9.0	11.5	9.0	11.5	10.5	11.0	10.5
17	5.0	4.0	8.5	7.5	11.5	9.0	10.5	8.5	12.0	10.5	11.5	10.5
18	5.0	4.5	8.5	6.5	12.0	10.0	11.0	9.0	12.0	11.0	11.0	10.0
19	5.5	4.0	9.0	6.0	12.0	10.5	11.5	9.0	11.5	11.0	11.5	10.5
20	5.0	4.5	8.5	7.0	12.5	11.0	11.0	9.5	12.0	11.0	11.0	10.0
21	5.5	4.0	8.5	6.0	11.5	10.0	11.0	9.5	12.5	11.0	12.0	9.5
22	5.5	4.5	10.0	7.5	10.0	9.5	11.5	9.5	12.5	11.5	12.5	11.5
23	6.0	5.0	10.0	8.5	10.5	9.5	12.0	10.5	12.5	11.5	13.0	12.0
24	6.5	5.5	9.5	8.5	11.5	9.5	12.0	10.5	13.0	11.5	13.0	12.0
25	6.5	5.0	8.5	7.5	11.0	9.5	11.5	9.5	13.0	11.5	13.0	12.0
26	5.5	5.0	8.5	7.0	12.0	9.0	12.0	10.5	12.0	11.5	12.5	10.0
27	6.5	5.0	10.5	7.5	13.5	10.5	12.0	10.0	11.5	10.0	11.5	10.0
28	5.5	4.5	10.0	9.0	14.0	11.0	11.5	10.0	11.5	10.0	11.5	10.0
29	7.0	4.5	9.0	7.5	14.5	12.0	11.5	10.0	12.0	10.5	10.5	10.0
30	8.0	6.0	8.5	8.0	15.0	12.5	11.0	10.0	12.0	10.5	11.5	9.5
31	---	---	8.5	7.5	---	---	12.5	10.0	13.0	10.5	---	---
MONTH	8.0	2.0	10.5	5.5	15.0	7.0	14.0	8.5	13.0	10.0	13.0	9.5
YEAR	15.0	1.0										

12323750 SILVER BOW CREEK AT WARM SPRINGS, MT

LOCATION.--Lat 46°11'07", long 112°46'04", in SE¼ sec.18, T.5 N., R.9 W., Deer Lodge County, Hydrologic Unit 17010201, on right bank 0.3 mi (0.5 km) upstream from county highway bridge, 0.2 mi (0.3 km) upstream from confluence with Warm Springs Creek, and 1.0 mi (1.6 km) northeast of Warm Springs.

DRAINAGE AREA.--483 mi^2 (1,251 km^2).

PERIOD OF RECORD.--March 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,787.95 ft (1,459.367 m) above mean sea level.

REMARKS.--Records good. Flow can be regulated by dam on Anaconda Co. tailing ponds about 0.5 mi (0.8 km) upstream from gage. Diversions for irrigation of about 4,650 acres (18.8 km^2) above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,320 ft^3/s (37.4 m^3/s) June 20, 1975, gage height, 7.47 ft (2.277 m); maximum gage height, 8.64 ft (2.633 m) Jan. 16, 1974 (backwater from ice jam); minimum daily discharge, 15 ft^3/s (0.43 m^3/s) Sept. 12, 13, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,210 ft^3/s (34.3 m^3/s) Mar. 18, gage height, 6.84 ft (2.085 m); minimum daily, 69 ft^3/s (1.95 m^3/s) Feb. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	114	160	128	119	159	120	314	298	464	251	111	120
2	112	76	185	105	152	110	283	317	457	238	112	100
3	91	138	226	119	139	111	234	343	442	226	114	96
4	73	298	234	129	104	107	234	446	431	213	120	98
5	96	279	228	132	79	107	257	471	455	206	127	90
6	158	210	203	125	69	106	277	469	429	203	133	94
7	168	128	197	120	74	113	307	463	446	197	124	107
8	176	163	202	110	88	130	324	488	459	190	124	111
9	174	200	218	104	102	144	327	555	477	180	126	110
10	117	183	218	102	115	172	304	647	468	177	121	104
11	172	128	205	105	122	263	310	793	408	169	117	112
12	208	131	187	111	132	271	293	732	442	175	111	142
13	226	149	156	113	146	214	312	696	466	194	100	143
14	264	160	131	115	161	186	309	763	416	180	103	144
15	271	114	122	124	163	178	310	771	379	168	100	143
16	254	230	128	153	147	174	305	729	343	157	108	144
17	228	228	127	197	136	292	297	615	359	142	107	125
18	232	185	119	190	128	765	281	630	381	135	110	135
19	153	163	116	188	123	562	269	648	357	164	112	183
20	232	138	112	160	122	287	260	612	381	173	104	199
21	255	118	109	137	123	241	250	564	410	162	100	194
22	305	110	105	132	116	214	242	555	459	153	94	179
23	295	102	105	131	118	200	245	638	437	138	124	151
24	267	128	106	132	123	190	242	627	393	124	210	169
25	210	160	117	152	136	177	249	726	356	124	210	159
26	247	165	133	151	143	167	274	675	326	120	168	152
27	241	160	143	137	154	163	272	604	293	112	150	139
28	220	147	140	147	145	161	279	625	274	111	137	155
29	123	138	137	153	130	156	279	607	267	110	126	137
30	99	130	146	130	---	154	295	547	263	107	121	130
31	208	---	141	159	---	177	---	514	---	110	121	---
TOTAL	5989	4819	4824	4182	3649	6412	8434	18168	11997	5109	3845	4065
MEAN	193	161	156	135	126	207	281	586	400	165	124	136
MAX	305	298	234	197	163	765	327	793	477	251	210	199
MIN	73	76	105	102	69	106	234	298	263	107	94	90
AC-FT	11880	9560	9570	8290	7240	12720	16730	36040	23800	10130	7630	8060

CAL YR 1975 TOTAL 89879 MEAN 246 MAX 1220 MIN 24 AC-FT 178300
WTR YR 1976 TOTAL 81493 MEAN 223 MAX 793 MIN 69 AC-FT 161600

12324590 LITTLE BLACKFOOT RIVER NEAR GARRISON, MT

LOCATION.--Lat 46°32'12", long 112°43'33", in SE¼NE¼ sec.16, T.9 N., R.9 W., Powell County, Hydrologic Unit 17010201, on left bank 200 ft (61 m) downstream from bridge on county road, 4 mi (6 km) east of Garrison.
DRAINAGE AREA.--398 mi^2 (1,031 km^2).

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,430 ft (1,350 m), from topographic map.

REMARKS.--Records good except those for winter period, which are fair. A few minor irrigation holding reserboirs in upper reaches of drainage. Diversions for irrigation of about 10,500 acres (42.5 km^2).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,650 ft^3/s (103 m^3/s) June 19, 1975, gage height, 7.50 ft (2.286 m); minimum, 6.3 ft^3/s (0.178 m^3/s) July 18, 1973, gage height, 1.89 ft (0.576 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 550 ft^3/s (15.6 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 4	2100	925	26.2	4.82	1.469	May 11	1800	*1,820	51.5	6.14	1.871
Mar. 18	2200	1,100	31.2	5.04	1.536	May 15	1000	--	--	*6.28	1.914
Mar. 31	2300	926	27.2	4.87	1.484	June 7	0200	649	18.4	4.98	1.518
Apr. 13	0600	768	21.7	4.60	1.402	June 24	0200	612	17.3	4.92	1.500
May 6	1000	1,250	35.4	5.31	1.618						

Minimum discharge, 54 ft^3/s (1.53 m^3/s) Feb. 6, gage height, 2.91 ft (0.887 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	88	145	130	100	108	75	375	553	686	345	101	95
2	86	146	500	85	108	65	200	648	633	314	117	91
3	84	151	649	90	103	70	264	741	579	287	120	88
4	80	154	540	100	101	80	373	1020	582	265	118	87
5	82	152	357	115	70	90	442	1220	596	262	115	84
6	83	151	206	115	68	105	531	1180	561	242	113	87
7	89	149	196	114	86	115	588	1050	630	207	111	94
8	102	145	220	114	126	115	580	1000	558	192	129	93
9	107	131	342	105	136	120	606	1120	540	186	121	91
10	104	126	246	103	123	120	554	1410	526	180	115	89
11	107	126	193	101	114	130	599	1700	530	173	114	89
12	133	121	172	101	119	146	650	1610	523	206	107	93
13	148	125	151	105	131	143	724	1470	481	219	101	93
14	168	127	143	99	121	136	685	1610	463	193	106	91
15	158	132	157	121	105	131	685	1730	437	202	111	87
16	146	137	135	296	103	108	621	1560	427	181	111	76
17	140	127	125	357	101	213	582	1460	540	151	105	71
18	136	119	110	270	99	583	546	1510	507	153	106	75
19	136	106	120	172	97	421	510	1390	450	162	109	83
20	137	94	120	143	97	200	468	1320	456	171	102	86
21	162	90	120	131	94	154	437	1200	496	178	97	84
22	179	95	120	126	94	163	418	1140	526	174	95	83
23	166	105	120	131	95	235	397	1200	564	160	113	82
24	147	112	122	116	95	154	375	1120	588	159	163	81
25	141	113	130	110	94	133	398	1180	528	165	133	84
26	158	110	132	108	95	126	384	1060	494	158	121	86
27	153	105	138	119	94	141	342	941	461	134	114	86
28	140	95	126	143	94	126	354	903	428	111	110	85
29	135	90	126	149	80	116	405	897	392	108	105	81
30	146	85	126	135	---	143	491	788	369	100	103	80
31	148	---	110	121	---	410	---	740	---	99	99	---
TOTAL	3989	3664	6182	4195	2951	5067	14584	36471	15549	5837	3485	2576
MEAN	129	122	199	135	102	163	486	1176	518	188	112	85.8
MAX	179	154	649	357	136	583	724	1730	686	345	163	95
MIN	80	85	110	85	68	65	200	553	369	99	95	71
AC-FT	7910	7270	12260	8320	5850	10050	28930	72340	30840	11580	6910	5110

CAL YR 1975 TOTAL 126823 MEAN 347 MAX 2830 MIN 37 AC-FT 251600
WTR YR 1976 TOTAL 104569 MEAN 286 MAX 1730 MIN 65 AC-FT 207400

12325500 FLINT CREEK NEAR SOUTHERN CROSS, MT

LOCATION.--Lat 46°14'02", long 113°17'43", in SE¼NW¼ sec.36, T.6 N., R.14 W., Granite County, Hydrologic Unit 17010202, on left wing of weir 0.5 mi (0.8 km) downstream from powerplant, 2.0 mi (3.2 km) downstream from Georgetown Dam, 3.5 mi (5.6 km) northwest of Southern Corss, 6.8 mi (10.9 km) south of Philipsburg, and at mile 36.8 (59.2 km).

DRAINAGE AREA.--52.6 mi^2 (136 km^2).

PERIOD OF RECORD.--October 1940 to current year.

REVISED RECORDS.--WSP 1216: 1942(M). WSP 1246: Drainage area.

GAGE.--Nonrecording gage and sharp-crested, contracted, rectangular weir. Altitude of gage is 5,630 ft (1,720 m), from topographic map.

REMARKS.--Records good except those for period July 16 to Sept. 3, which are fair. Flow regulated by Georgetown Lake (see p. 714). Flow may be augmented by transbasin diversion from Silver Lake to Georgetown Lake or reduced by pumping from Georgetown Lake to Silver Lake.

COOPERATION.--Gage-height record furnished by The Montana Power Company under general supervision of Geological Survey in connection with a Federal Power Commission project.

AVERAGE DISCHARGE.--36 years, 28.8 ft^3/s (0.816 m^3/s), 20,870 acre-ft/yr (25.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 174 ft^3/s (4.93 m^3/s) June 13, 1942, gage height, 1.86 ft (0.567 m); maximum gage height observed, 2.58 ft (0.786 m) July 6, 1975; probably no flow for parts of Aug. 20, 1943, May 23, 1952, Oct. 6, 1954, Nov. 29, Dec. 1, 1966 and no flow Nov. 30, 1966, when generator was shut down.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 134 ft^3/s (3.79 m^3/s) June 22; maximum gage height observed, 2.30 ft (0.701 m) June 22; minimum daily discharge, 26 ft^3/s (0.736 m^3/s) Dec. 18 to Mar. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	27	51	26	26	26	52	88	114	101	63	54
2	33	27	79	26	26	26	52	88	116	101	62	54
3	33	27	88	26	26	26	52	94	116	101	62	42
4	33	27	88	26	26	26	53	98	116	101	61	30
5	33	27	89	26	26	26	53	100	116	101	61	30
6	33	27	89	26	26	26	54	97	116	101	61	30
7	33	27	89	26	26	26	54	97	117	101	61	30
8	33	27	89	26	26	26	54	98	116	101	60	30
9	33	27	89	26	26	26	55	100	117	100	60	30
10	33	27	89	26	26	26	58	100	117	100	59	30
11	33	27	89	26	26	26	58	106	117	100	59	30
12	33	27	89	26	26	26	57	113	117	101	59	30
13	54	27	61	26	26	26	57	109	121	101	59	30
14	79	27	27	26	26	26	58	109	126	101	58	30
15	79	27	27	26	26	26	58	109	120	100	58	30
16	79	27	27	26	26	37	57	109	127	91	57	45
17	79	27	27	26	26	50	57	106	129	67	57	45
18	79	27	26	26	26	52	55	105	131	65	57	45
19	79	27	26	26	26	52	53	103	129	59	57	45
20	79	27	26	26	26	52	52	101	131	62	56	47
21	79	27	26	26	26	52	56	101	131	63	56	47
22	79	27	26	26	26	52	59	111	130	65	55	47
23	79	27	26	26	26	52	58	117	124	65	55	48
24	80	27	26	26	26	52	59	117	124	65	54	48
25	80	27	26	26	26	52	59	119	124	65	54	47
26	80	27	26	26	26	52	59	117	124	65	54	47
27	80	27	26	26	26	52	72	117	124	64	54	48
28	80	27	26	26	26	52	86	117	124	64	54	48
29	80	27	26	26	26	52	86	117	115	63	54	48
30	51	27	26	26	---	52	86	116	101	63	54	48
31	27	---	26	26	---	52	---	114	---	63	54	---
TOTAL	1798	810	1551	806	754	1205	1779	3293	3630	2550	1785	1221
MEAN	58.0	27.0	50.0	26.0	26.0	38.9	59.3	106	121	82.3	57.6	40.7
MAX	80	27	89	26	26	52	86	119	131	101	63	54
MIN	27	27	26	26	26	26	52	88	101	65	54	30
AC-FT	3570	1610	3080	1600	1500	2390	3530	6530	7210	5060	3540	2420

CAL YR 1975 TOTAL 14331.0 MEAN 39.3 MAX 171 MIN 2.8 AC-FT 28430
WTR YR 1976 TOTAL 21188.0 MEAN 57.9 MAX 131 MIN 26 AC-FT 42030

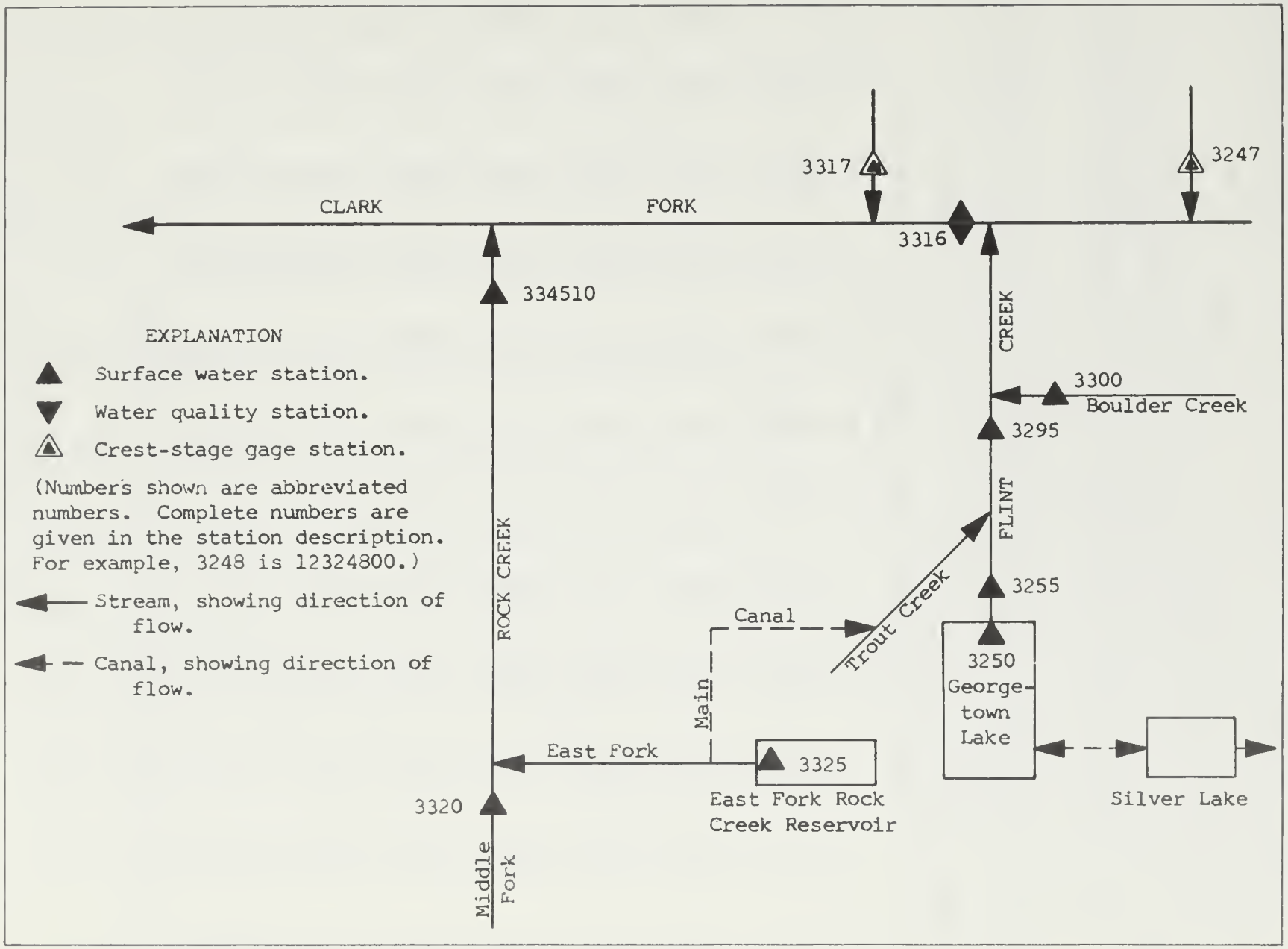


Figure 10 Schematic diagram showing diversion from Rock Creek basin to Flint Creek basin.

12329500 FLINT CREEK AT MAXVILLE, MT

LOCATION.--Lat 46°27'54", long 113°14'20", in NW¼ sec.9, T.8 N., R.13 W., Granite County, Hydrologic Unit 17010202, on right bank 0.4 mi (0.6 km) west of Maxville and 1.0 mi (1.6 km) upstream from Boulder Creek.

DRAINAGE AREA.--208 mi^2 (539 km^2).

PERIOD OF RECORD.--August 1941 to current year. April 1939 to September 1941 at site 0.5 mi (0.8 km) upstream (above Maxville siding); records not equivalent owing to diversions.

REVISED RECORDS.--WSP 1216: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,828.38 ft (1,471.690 m) above mean sea level.

REMARKS.--Records good. Some regulation by Georgetown Lake (see p. 714) Diversions for irrigation of about 8,200 acres (33.2 km^2) above station. During irrigation season, flow is supplemented by water from East Fork Rock Creek which is diverted in sec.5, T.4 N., R.14 W., 500 ft (152 m) below Rock Creek Dam, through a canal into Trout Creek, thence into Flint Creek (see schematic diagram, p. 645).

AVERAGE DISCHARGE.--35 years, 100 ft^3/s (2.832 m^3/s), 72,450 acre-ft/yr (89.3 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,680 ft^3/s (47.6 m^3/s) Mar. 28, 1943, gage height, 6.79 ft (2.070 m), from rating curve extended above 600 ft^3/s (17.0 m^3/s); maximum gage height, 8.08 ft (2.463 m) Feb. 4, 1963 (backwater from ice); minimum daily discharge, 15 ft^3/s (0.42 m^3/s) Feb. 25, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 582 ft^3/s (16.5 m^3/s) June 23, gage height, 5.04 ft (1.536 m); minimum daily, 33 ft^3/s (0.935 m^3/s) Feb. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	116	126	101	64	71	55	169	246	303	287	171	138
2	135	122	142	80	71	50	107	272	287	268	175	136
3	130	117	219	99	69	45	112	295	274	238	168	139
4	130	117	194	96	33	60	147	348	256	230	178	119
5	133	119	164	81	65	80	178	386	258	234	173	97
6	133	119	141	81	65	85	206	361	258	200	173	103
7	147	116	145	85	68	83	226	329	274	196	187	108
8	133	112	159	85	71	80	228	341	308	180	209	103
9	110	106	176	83	80	80	236	356	314	178	189	111
10	106	104	159	80	72	90	207	378	297	164	182	112
11	103	106	150	82	73	100	226	421	320	148	171	116
12	104	102	145	83	81	80	244	406	308	187	158	145
13	116	104	135	84	80	78	254	361	282	189	139	129
14	144	104	110	88	77	78	230	393	278	180	144	124
15	161	106	101	100	72	80	221	431	268	189	142	127
16	168	111	96	175	70	84	207	388	268	200	142	135
17	164	104	93	153	73	162	192	363	303	189	142	145
18	163	97	90	106	69	258	171	373	299	189	138	163
19	156	101	90	87	71	184	155	358	278	246	138	182
20	158	100	92	82	73	108	147	341	316	228	144	168
21	178	99	94	80	68	98	142	329	368	226	155	158
22	206	99	95	80	68	101	144	323	433	217	153	155
23	175	98	98	80	73	115	142	341	528	191	183	153
24	166	103	102	76	73	98	138	346	431	185	198	150
25	163	99	106	73	72	97	153	393	363	207	156	158
26	176	95	99	80	75	93	161	391	325	202	171	148
27	170	92	89	79	75	97	153	334	297	180	155	139
28	166	91	82	79	73	92	171	358	291	166	153	150
29	166	96	84	80	72	91	185	358	289	170	151	148
30	175	93	83	77	---	98	226	318	289	173	151	145
31	144	---	71	73	---	140	---	308	---	175	145	---
TOTAL	4595	3158	3705	2731	2053	3040	5478	10946	9363	6212	5034	4104
MEAN	148	105	120	88.1	70.8	98.1	183	353	312	200	162	137
MAX	206	126	219	175	81	258	254	431	528	287	209	182
MIN	103	91	71	64	33	45	107	246	256	148	138	97
AC-FT	9110	6260	7350	5420	4070	6030	10870	21710	18570	12320	9980	8140

CAL YR 1975 TOTAL 54200 MEAN 148 MAX 644 MIN 25 AC-FT 107500
WTR YR 1976 TOTAL 60419 MEAN 165 MAX 528 MIN 33 AC-FT 119800

12330000 BOULDER CREEK AT MAXVILLE, MT

LOCATION.--Lat 46°28'20", long 113°13'59", in SW¼ sec.4, T.8 N., R.13 W., Granite County, Hydrologic Unit 17010202, on right bank 0.2 mi (0.3 km) upstream from mouth and 0.7 mi (1.1 km) north of Maxville.

DRAINAGE AREA.--71.3 mi^2 (185 km^2).

PERIOD OF RECORD.--April 1939 to current year. Monthly discharge only for some periods, published in WSP 1316.

GAGE.--Water-stage recorder. Altitude of gage is 4,750 ft (1,448 m), from topographic map. Apr. 15, 1939, to July 7, 1941, nonrecording gage at site 75 ft (23 m) upstream at different datum. July 8-20, 1941, nonrecording gage at site 175 ft (53 m) upstream at datum 1.03 ft (0.314 m) higher.

REMARKS.--Records good except those for winter period, which are fair. Diversions for irrigation of about 238 acres (960,000 m^2), all of which lies below station.

AVERAGE DISCHARGE.--37 years, 48.0 ft^3/s (1.359 m^3/s), 34,780 acre-ft/yr (42.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,460 ft^3/s (41.3 m^3/s) June 19, 1975, gage height, 4.55 ft (1.387 m) in gage well, 4.80 ft (1.463 m) from floodmarks; minimum, 3.0 ft^3/s (0.085 m^3/s) about Mar. 25, 1964, gage height, 0.73 ft (0.223 m), result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 150 ft^3/s (4.25 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 23	--	(a)		*3.87	1.180	June 11	1400	450	12.7	3.45	1.052
May 14	2130	400	11.3	3.33	1.015	June 22	1300	422	12.0	3.38	1.030
May 25	0700	*482	13.7	3.52	1.073						

a Backwater from ice.

Minimum discharge, 22 ft^3/s (0.623 m^3/s) Feb. 4, gage height, 1.27 ft (0.387 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	47	38	28	31	26	32	57	280	208	47	33
2	34	47	42	29	31	24	31	70	270	188	47	32
3	32	49	47	30	29	25	31	72	270	172	47	29
4	32	53	45	32	27	26	32	116	255	164	46	28
5	33	53	42	33	23	27	36	131	255	156	47	28
6	35	54	42	33	25	30	39	130	289	148	48	33
7	41	53	41	33	27	29	43	133	325	146	47	33
8	43	49	41	33	28	29	47	158	358	139	49	29
9	43	47	42	32	29	28	51	191	365	131	45	28
10	45	47	42	32	31	28	51	223	344	124	44	28
11	46	47	41	32	30	28	55	280	403	113	42	29
12	45	46	41	32	29	27	62	243	325	124	42	38
13	47	47	40	32	29	28	67	245	278	113	44	33
14	48	47	40	33	29	28	65	368	238	103	44	30
15	49	48	40	33	29	29	65	354	218	97	43	29
16	47	48	39	34	29	28	62	313	233	91	45	28
17	46	45	38	35	29	30	60	331	268	87	41	31
18	49	43	39	34	29	31	57	351	235	87	39	40
19	49	40	39	34	28	30	54	328	233	103	38	41
20	57	37	38	34	28	29	53	328	295	95	37	36
21	62	38	39	33	28	29	50	307	310	90	36	32
22	59	40	38	34	28	30	50	310	400	82	36	30
23	51	40	37	33	28	30	49	328	325	76	41	29
24	47	43	37	33	28	30	49	347	263	73	45	32
25	47	42	36	32	28	29	51	430	233	77	40	34
26	49	42	36	32	28	29	49	331	204	68	52	35
27	47	41	35	32	28	29	49	325	188	60	42	34
28	47	39	35	32	27	30	49	379	186	56	39	32
29	47	36	34	32	28	30	48	316	186	52	36	32
30	47	35	34	32	---	30	50	292	208	50	35	31
31	47	---	30	31	---	32	---	292	---	48	34	---
TOTAL	1405	1343	1208	1004	821	888	1487	8079	8240	3321	1318	957
MEAN	45.3	44.8	39.0	32.4	28.3	28.6	49.6	261	275	107	42.5	31.9
MAX	62	54	47	35	31	32	67	430	403	208	52	41
MIN	32	35	30	28	23	24	31	57	186	48	34	28
AC-FT	2790	2660	2400	1990	1630	1760	2950	16020	16340	6590	2610	1900

CAL YR 1975 TOTAL 30247 MEAN 82.9 MAX 1140 MIN 15 AC-FT 59990
WTR YR 1976 TOTAL 30071 MEAN 82.2 MAX 430 MIN 23 AC-FT 59650

12331600 CLARK FORK AT DRUMMOND, MT

LOCATION.--Lat 46°39'45", long 113°08'57", in SE¼NW¼SE¼ sec.31, T.11 N., R.12 W., Granite County, Hydrologic Unit 17010201, at bridge on old U.S. Highway 10A, 0.4 mi (0.6 km) southwest of Drummond, 0.9 mi (1.4 km) downstream from Flint Creek, and at mile 417.0 (671.0 km).

DRAINAGE AREA.--2,378 mi² (6,159 km²).

PERIOD OF RECORD.--March 1967 to June 1968, October 1970, June 1971 to September 1972 (occasional discharge measurements and gage heights only). October 1972 to current year.

GAGE.--Nonrecording gage read once or twice daily. Datum of gage is 3,937.95 ft (1,200.287 m) above mean sea level.

REMARKS.--Records good. Some regulation by settling ponds on Silver Bow Creek near Anaconda and by Georgetown Lake (see p.714) on Flint Creek. Diversions for irrigation of about 86,500 acres (350 km²) above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,490 ft³/s (240 m³/s) June 20, 1975, gage height, 10.60 ft (3.231 m), from floodmarks; minimum daily, 58 ft³/s (1.64 m³/s) Aug. 15, 20, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1908 reached a stage of about 15.5 ft (4.72 m) present datum (discharge not determined), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,270 ft³/s (149 m³/s) May 12, gage height, 8.70 ft (2.652 m), from floodmarks; minimum daily, 465 ft³/s (13.2 m³/s) Mar. 2, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	814	1290	1000	801	911	545	1640	1970	2470	1530	758	740
2	939	1150	1530	820	932	465	1350	2020	2270	1520	776	717
3	855	1130	2510	827	904	599	1350	2170	2120	1410	789	706
4	841	1150	1850	904	869	735	1560	2580	2120	1320	801	681
5	820	1370	1770	939	599	776	1630	3100	2100	1250	814	663
6	820	1260	1750	862	599	855	1830	3220	2110	1220	783	663
7	1020	1220	1280	869	904	904	1930	3240	2220	1200	789	694
8	1070	1100	1260	890	925	876	1970	3180	2330	1140	783	706
9	1030	1170	1590	897	1010	972	2010	3410	2390	1080	776	723
10	1070	1110	1420	869	972	1010	1910	3820	2470	1080	795	729
11	1100	1130	1300	848	890	1140	2020	4340	2630	1120	807	706
12	1160	1070	1250	820	1030	1130	2190	4660	2770	1200	795	801
13	1210	1070	1130	834	990	1060	2290	4200	2530	1220	752	862
14	1440	1080	996	869	966	966	2310	4180	2320	1190	752	876
15	1430	1120	984	978	911	911	2300	4710	2080	1130	746	848
16	1380	1160	966	1380	862	925	2280	4510	2060	1080	752	820
17	1390	1200	966	1900	841	1090	2140	4200	2380	1010	729	783
18	1290	1130	946	1620	807	1790	1930	4070	2360	1060	735	807
19	1220	1040	925	1060	827	2520	1790	3890	2160	1170	764	939
20	1170	932	966	984	807	1470	1670	3680	2270	1130	783	953
21	1400	918	966	972	820	1170	1580	3470	2620	1110	758	925
22	1530	966	972	918	814	1060	1530	3350	2880	1090	783	904
23	1510	984	984	1000	841	1200	1470	3470	3080	990	848	876
24	1400	996	1000	918	869	1090	1430	3520	2940	939	966	820
25	1330	1030	1010	911	841	972	1480	3570	2600	972	1000	918
26	1300	1020	1010	939	855	978	1560	3660	2350	848	939	862
27	1280	966	990	918	848	984	1570	3370	2110	834	918	841
28	1250	966	978	939	876	996	1600	3130	1890	807	862	814
29	1170	984	932	996	827	966	1700	3130	1750	783	848	855
30	1160	966	911	978	---	1060	1920	2830	1640	770	814	820
31	1140	---	883	932	---	1610	---	2630	---	729	776	---
TOTAL	36539	32678	37025	30392	25147	32825	53940	107280	70020	33932	24991	24052
MEAN	1179	1089	1194	980	867	1059	1798	3461	2334	1095	806	802
MAX	1530	1370	2510	1900	1030	2520	2310	4710	3080	1530	1000	953
MIN	814	918	883	801	599	465	1350	1970	1640	729	729	663
AC-FT	72480	64820	73440	60280	49880	65110	107000	212800	138900	67300	49570	47710

CAL YR 1975 TOTAL 541273 MEAN 1483 MAX 7930 MIN 168 AC-FT 1074000
WTR YR 1976 TOTAL 508821 MEAN 1390 MAX 4710 MIN 465 AC-FT 1009000

12332000 MIDDLE FORK ROCK CREEK NEAR PHILIPSBURG, MT

LOCATION.--Lat 46°11'42", long 113°30'00", in SW¼SE¼ sec.8, T.5 N., R.15 W., Granite County, Hydrologic Unit 17010202, on right bank 0.3 mi (0.5 km) upstream from East Fork, 2.3 mi (3.7 km) upstream from West Fork, and 13.7 mi (22.0 km) southwest of Philipsburg.

DRAINAGE AREA.--123 mi^2 (319 km^2).

PERIOD OF RECORD.--September 1937 to current year. Monthly discharge only January to March 1938, published in WSP 1316.

GAGE.--Water-stage recorder. Datum of gage is 5,385.84 ft (1,641.604 m) above mean sea level. Sept. 21, 1937 to May 10, 1942, nonrecording gage at site 600 ft (183 m) upstream at different datum. May 11, 1942, to May 11, 1954, nonrecording gages at site 400 ft (122 m) downstream at different datum. May 12, 1954, to Sept. 30, 1955, nonrecording gage at site 300 ft (91 m) upstream at datum 5.74 ft (1.750 m) higher.

REMARKS.--Records good except those for winter period, which are poor. A few small diversions for irrigation above station.

AVERAGE DISCHARGE.--39 years, 124 ft^3/s (3.511 m^3/s), 13.69 in/yr (348 mm/yr), 89,840 acre-ft/yr (111 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,680 ft^3/s (47.6 m^3/s) June 16, 1974, gage height, 5.58 ft (1.701 m); minimum daily, 5.3 ft^3/s (0.150 m^3/s) Feb. 9, 1953.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 450 ft^3/s (12.7 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 28	1200	*930	26.3	*4.48	1.366	June 22	0600	662	18.7	4.08	1.244
June 11	1400	875	24.8	4.43	1.350						

Minimum discharge, 21.1 ft^3/s (0.598 m^3/s) Feb. 29, gage height, 1.77 ft (0.539 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	84	80	44	64	50	55	148	646	395	110	61
2	57	84	95	52	63	45	51	180	630	373	108	59
3	55	88	95	55	62	40	51	213	658	339	104	57
4	57	92	85	56	50	47	57	266	643	318	104	56
5	61	90	79	56	45	50	67	288	623	299	105	55
6	59	90	76	58	50	51	79	287	637	288	97	61
7	64	88	72	58	54	52	90	310	669	282	92	70
8	94	84	67	58	60	52	105	355	729	270	94	63
9	77	76	71	58	64	52	118	427	780	258	94	59
10	72	77	69	58	58	52	117	507	743	248	90	57
11	72	79	66	58	56	50	134	677	815	234	87	59
12	74	71	62	59	54	48	164	631	683	243	82	85
13	83	77	45	60	54	50	180	633	589	229	79	75
14	83	77	46	62	54	52	176	780	503	205	77	65
15	84	77	45	63	53	50	177	751	446	190	76	60
16	79	84	43	64	52	52	161	710	422	179	88	57
17	76	77	45	67	52	52	152	755	451	170	81	59
18	81	71	45	66	52	52	144	834	423	178	78	68
19	76	46	45	64	52	52	137	821	410	196	82	77
20	77	45	44	64	52	50	134	773	531	170	75	67
21	112	47	45	66	52	52	129	723	601	179	72	60
22	168	59	45	68	54	52	126	723	645	163	72	57
23	122	81	50	64	56	52	121	702	550	151	85	57
24	104	84	54	62	58	50	122	736	469	142	108	56
25	99	76	58	64	56	50	137	844	421	146	84	56
26	101	74	59	64	54	50	129	762	382	133	86	55
27	91	67	59	64	53	47	123	741	351	125	81	55
28	93	45	60	64	52	45	117	896	331	118	72	54
29	88	43	60	64	51	45	118	810	338	113	69	52
30	88	58	59	64	---	47	129	718	372	108	70	50
31	88	---	55	64	---	55	---	688	---	107	65	---
TOTAL	2613	2191	1879	1888	1587	1544	3600	18689	16480	6549	2667	1822
MEAN	84.3	73.0	60.6	60.9	54.7	49.8	120	603	549	211	86.0	60.7
MAX	168	92	95	68	64	55	180	896	815	395	110	85
MIN	55	43	43	44	45	40	51	148	331	107	65	50
CFSM	.69	.59	.49	.50	.44	.40	.98	4.90	4.46	1.72	.70	.49
IN.	.79	.66	.57	.57	.48	.47	1.09	5.65	4.98	1.98	.81	.55
AC-FT	5180	4350	3730	3740	3150	3060	7140	37070	32690	12990	5290	3610

CAL YR 1975 TOTAL 59992 MEAN 164 MAX 1120 MIN 24 CFSM 1.33 IN 18.14 AC-FT 119000
WTR YR 1976 TOTAL 61509 MEAN 168 MAX 896 MIN 40 CFSM 1.37 IN 18.60 AC-FT 122000

12334510 ROCK CREEK NEAR CLINTON, MT

LOCATION.--Lat 46°43'21", long 113°40'56", in NE¼SW¼ sec.12, T.11 N., R.17 W., Missoula County, Hydrologic Unit 17010202, on left bank just downstream from private road bridge, 0.2 mi (0.3 km) upstream from mouth, and 3.7 mi (6.0 km) southeast of Clinton.

DRAINAGE AREA.--885 mi^2 (2,292 km^2).

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,519.455 ft (1,072.730 m) above mean sea level.

REMARKS.--Records good. Some regulation by East Fork Rock Creek Reservoir (see p.714). During irrigation season water is diverted from East Fork Rock Creek in sec.5, T.4 N., R.14 W., 500 ft (152 m) below Rock Creek Dam, through a canal into Trout Creek, thence into Flint Creek (see schematic diagram, p.645). Diversions for irrigation of about 16,100 acres (65.2 km^2).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,520 ft^3/s (156 m^3/s) June 20, 1975, gage height, 7.49 ft (2.283 m); minimum, 45 ft^3/s (1.27 m^3/s) Jan. 3, 1974, gage height, 1.65 ft (0.503 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1972 reached a stage of 8.5 ft (2.59 km), from floodmark, discharge, 6,500 ft^3/s (184 m^3/s); local residents report flood of 1927 reached a stage of about 9.5 ft (2.90 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,610 ft^3/s (45.6 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 13	0800	1640	46.4	5.11	1.558	June 22	1700	2920	82.7	6.35	1.935
May 15	0730	*5190	147	*7.46	2.274						

Minimum discharge, 132 ft^3/s (3.74 m^3/s) Mar. 4, gage height, 2.57 ft (0.783 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	302	479	388	267	292	257	460	887	3490	1770	637	369
2	306	485	631	242	293	223	380	1080	3310	1710	689	355
3	305	503	709	288	294	176	358	1380	3220	1610	650	333
4	311	535	663	416	250	238	430	1920	3100	1510	624	306
5	316	535	676	407	210	270	545	2410	2950	1440	643	300
6	318	528	551	358	220	295	729	2290	2890	1400	643	319
7	408	528	557	333	250	292	901	2210	3020	1330	569	348
8	565	507	528	337	300	274	1050	2460	3190	1290	557	344
9	488	473	539	341	300	279	1220	3090	3450	1240	545	327
10	444	453	551	322	360	301	1080	3720	3480	1180	534	320
11	441	461	534	318	373	355	1140	4530	3520	1150	512	317
12	456	436	512	318	340	319	1320	4570	3480	1310	485	352
13	482	440	460	299	326	303	1500	4130	3030	1300	470	364
14	565	450	411	295	332	308	1460	4690	2700	1140	465	357
15	552	460	421	333	295	285	1410	5060	2360	1070	455	348
16	535	490	425	336	285	282	1240	4740	2240	1010	485	349
17	506	465	366	406	289	315	1090	4620	2440	974	485	350
18	500	418	337	387	282	492	982	4760	2470	959	455	344
19	499	371	346	350	271	545	908	4680	2280	1100	455	383
20	491	295	350	321	270	404	838	4550	2460	1090	445	388
21	568	303	354	308	261	353	805	4390	2850	1070	435	366
22	705	318	354	308	258	337	777	4260	2860	1020	421	354
23	641	402	416	351	275	383	784	4160	2770	930	450	349
24	542	440	470	335	277	355	770	4200	2560	894	484	363
25	511	421	440	321	275	338	818	4550	2330	887	459	360
26	532	388	416	298	281	323	825	4430	2180	845	455	347
27	498	384	411	316	275	323	791	4120	2000	805	446	338
28	482	329	358	333	276	302	742	4360	1800	763	427	332
29	465	318	366	326	255	293	735	4240	1700	749	406	326
30	475	299	375	317	---	293	784	3820	1720	709	394	322
31	485	---	354	305	---	354	- -	3650	---	643	383	---
TOTAL	14694	12912	14269	10192	8265	9867	26872	113957	81850	34898	15563	10330
MEAN	474	430	460	329	285	318	896	3676	2728	1126	502	344
MAX	705	535	709	416	373	545	1500	5060	3520	1770	689	388
MIN	302	295	337	242	210	176	358	887	1700	643	383	300
CFSM	.54	.49	.52	.37	.32	.36	1.01	4.15	3.08	1.27	.57	.39
IN.	.62	.54	.60	.43	.35	.41	1.13	4.79	3.44	1.47	.65	.43
AC-FT	29150	25610	28300	20220	16390	19570	53300	226000	162300	69220	30870	20490

CAL YR 1975 TOTAL 299648 MEAN 821 MAX 5330 MIN 96 CFSM .93 IN 12.60 AC-FT 594400
WTR YR 1976 TOTAL 353669 MEAN 966 MAX 5060 MIN 176 CFSM 1.09 IN 14.87 AC-FT 701500

12335500 NEVADA CREEK ABOVE RESERVOIR, NEAR FINN, MT

LOCATION.--Lat 46°46'25", long 112°45'25", near south line of sec.20, T.12 N., R.9 W., Powell County, Hydrologic Unit 17010203, on right bank 0.3 mi (0.5 km) downstream from Gallagher Creek, 2 mi (3 km) upstream from Buffalo Creek, and 3 mi (5 km) west of Finn.

DRAINAGE AREA.--116 mi^2 (300 km^2).

PERIOD OF RECORD.--April 1939 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,660 ft (1,420 m), from river-profile map. Prior to Apr. 30, 1942, nonrecording gage at site 0.9 mi (1.4 km) downstream at different datum. Apr. 30, 1942, to July 26, 1953, water-stage recorder at site 1 mi (2 km) downstream at different datum.

REMARKS.--Records good except those for winter period, which are poor. Diversions for irrigation of about 2,900 acres (11.7 km^2) above station.

AVERAGE DISCHARGE.--37 years, 38.7 ft^3/s (1.096 m^3/s), 28,040 acre-ft/yr (34.6 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,800 ft^3/s (51.0 m^3/s) June 2, 1953, gage height, 6.00 ft (1.829 m), site and datum then in use, from rating curve extended above 400 ft^3/s (11.3 m^3/s) on basis of inflow-outflow study of Nevada Creek Reservoir; maximum gage height, 7.40 ft (2.256 m) May 29, 1953, site and datum then in use (backwater from diversion dam); minimum discharge, probably less than 2.0 ft^3/s (0.057 m^3/s) at times in 1944, 1957, 1972 and 1973.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 290 ft^3/s (8.21 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 3	1615	Ice jam		*5.25	1.600	May 4	1430	529	15.0	3.84	1.170
Mar. 31	1830	578	16.4	3.91	1.192	May 11	0900	602	17.0	3.94	1.201
Apr. 4	2000	408	11.6	3.52	1.073	May 15	0100	*838	23.7	4.03	1.228

Minimum discharge, 13.6 ft^3/s (0.385 m^3/s) Sept. 16, 17, gage height, 0.98 ft (0.299 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	36	50	15	20	18	143	165	173	46	27	18
2	24	38	100	17	19	16	87	180	160	43	30	19
3	22	37	150	17	17	16	143	233	158	39	30	19
4	22	34	130	17	16	16	184	415	153	36	28	19
5	22	32	100	18	14	17	197	415	137	36	27	17
6	24	31	80	17	16	18	225	351	134	35	27	20
7	32	31	80	17	17	18	215	317	142	35	27	19
8	37	29	90	17	18	19	205	324	132	34	29	16
9	31	27	110	17	19	19	206	430	129	26	26	15
10	28	29	70	17	19	19	181	520	127	26	25	15
11	31	33	41	17	19	18	187	560	126	27	24	15
12	37	31	35	17	19	18	224	517	111	35	22	17
13	39	30	30	17	19	17	257	410	100	33	21	16
14	36	32	25	18	19	17	224	528	94	31	21	15
15	31	31	25	18	18	18	203	672	85	30	21	14
16	29	31	23	19	19	18	182	478	86	29	21	14
17	28	26	21	19	19	18	157	389	94	31	20	15
18	27	25	21	19	19	18	134	400	80	35	21	19
19	26	24	21	18	18	18	115	376	69	39	21	19
20	29	24	21	17	18	17	105	342	70	37	20	18
21	36	25	21	16	18	18	98	327	71	36	20	17
22	36	25	21	16	17	19	93	320	79	33	20	17
23	32	26	22	17	18	18	86	332	88	31	24	17
24	29	27	23	16	19	19	81	320	81	29	28	19
25	29	26	25	16	19	19	91	336	67	28	21	21
26	33	25	25	16	19	20	87	291	61	28	22	19
27	32	25	24	16	19	21	91	248	57	26	20	18
28	29	25	21	17	19	23	87	240	52	25	19	17
29	27	24	22	18	19	30	113	231	50	23	19	17
30	29	25	21	18	---	93	171	199	47	21	18	16
31	36	---	20	19	---	258	---	183	---	20	17	---
TOTAL	929	864	1468	533	529	891	4572	11049	3013	983	716	517
MEAN	30.0	28.8	47.4	17.2	18.2	28.7	152	356	100	31.7	23.1	17.2
MAX	39	38	150	19	20	258	257	672	173	46	30	21
MIN	22	24	20	15	14	16	81	165	47	20	17	14
AC-FT	1840	1710	2910	1060	1050	1770	9070	21920	5980	1950	1420	1030

CAL YR 1975 TOTAL 30457.5 MEAN 83.4 MAX 920 MIN 6.0 AC-FT 60410
WTR YR 1976 TOTAL 26064.0 MEAN 71.2 MAX 672 MIN 14 AC-FT 51700

12338690 MONTURE CREEK NEAR OVANDO, MT

LOCATION.--Lat 47°02'44", long 113°11'23", in SW¼NE¼NW¼ sec.24, T.15 N., R.13 W., Powell County, Hydrologic Unit 17010203, on right bank 450 ft (137 m) upstream from bridge on State Highway 200, 0.15 mi (0.24 km) downstream from Dick Creek, 3.2 mi (5.1 km) northwest of Ovando, and 3.7 mi (6.0 km) upstream from mouth.

DRAINAGE AREA.--140 mi^2 (363 km^2).

PERIOD OF RECORD.--September 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,987.13 ft (1,215.277 m) above mean sea level.

REMARKS.--Records good except those for winter period, which are fair. Diversions for irrigation of about 1,700 acres (6.88 km^2) above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,120 ft^3/s (60.0 m^3/s) June 16, 1974, gage height, 4.18 ft (1.274 m); minimum, 24 ft^3/s (0.68 m^3/s) Apr. 1, 1975, gage height, 1.01 ft (0.308 m), result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,960 ft^3/s (55.5 m^3/s) May 15, gage height, 4.14 ft (1.262 m); minimum, 46 ft^3/s (1.30 m^3/s) Sept. 30, gage height, 1.25 ft (0.381 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	78	80	92	78	56	110	350	944	475	122	72
2	64	82	100	88	77	50	100	450	888	437	122	70
3	64	102	127	86	76	52	102	600	872	412	117	68
4	64	120	154	86	68	54	125	860	848	372	112	68
5	64	122	157	85	60	54	154	872	817	372	110	66
6	64	125	133	82	61	56	220	824	840	362	107	68
7	74	125	133	80	62	56	307	793	864	347	105	66
8	78	122	133	80	64	56	387	896	898	338	105	66
9	68	120	142	78	65	56	508	1150	1050	325	107	64
10	66	112	145	76	62	57	562	1340	1090	298	105	62
11	64	110	139	72	64	59	657	1670	1050	282	100	62
12	64	107	136	70	64	66	755	1530	928	307	96	62
13	68	100	120	72	66	54	840	1260	778	302	96	60
14	68	102	115	70	66	54	778	1580	678	262	92	59
15	66	105	95	76	64	54	720	1850	598	241	90	57
16	64	107	90	92	64	56	610	1500	568	224	92	56
17	62	102	80	100	66	60	526	1390	568	210	90	54
18	62	90	85	92	62	72	475	1390	544	203	88	54
19	60	80	85	90	62	78	427	1270	514	196	86	52
20	64	75	87	90	62	68	387	1190	568	189	86	51
21	72	75	89	90	62	66	362	1120	616	192	88	51
22	74	73	90	90	60	66	343	1090	664	182	84	51
23	70	68	90	88	61	70	320	1100	643	168	88	49
24	68	78	93	86	62	70	311	1230	580	161	88	51
25	70	80	95	84	62	68	325	1450	514	157	86	51
26	74	78	95	83	62	66	329	1300	464	151	88	51
27	74	78	90	82	62	68	329	1150	417	139	84	49
28	72	75	90	82	62	68	307	1240	392	133	80	49
29	72	73	95	80	60	68	286	1170	402	133	76	48
30	74	65	90	80	---	76	278	1030	453	127	76	48
31	76	---	90	78	---	94	---	976	---	122	74	---
TOTAL	2110	2829	3343	2580	1866	1948	11940	35621	21048	7839	2940	1735
MEAN	68.1	94.3	108	83.2	64.3	62.8	398	1149	702	253	94.8	57.8
MAX	78	125	157	100	78	94	840	1850	1090	475	122	72
MIN	60	65	80	70	60	50	100	350	392	122	74	48
AC-FT	4190	5610	6630	5120	3700	3860	23680	70650	41750	15550	5830	3440

CAL YR 1975 TOTAL 82747 MEAN 227 MAX 1570 MIN 27 AC-FT 164100
WTR YR 1976 TOTAL 95799 MEAN 262 MAX 1850 MIN 48 AC-FT 190000

12339450 CLEARWATER RIVER NEAR CLEARWATER, MT

LOCATION.--Lat 47°01'11", long 113°23'16", in NW¼NW¼NW¼ sec.33, T.15 N., R.14 W., Missoula County, Hydrologic Unit 17010203, Clearwater State Forest, on left bank 700 ft (213 m) upstream from Blanchard Lake, 1.3 mi (2.1 km) northwest of Clearwater, and 4.9 mi (7.9 km) upstream from mouth.

DRAINAGE AREA.--345 mi^2 (894 km^2).

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,814.23 ft (1,162.577 m) above mean sea level.

REMARKS.--Records good except those for winter period, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,900 ft^3/s (82.1 m^3/s) May 17, 1975, gage height, 7.85 ft (2.393 m); minimum, 59 ft^3/s (1.67 m^3/s) Sept. 22, 1976, gage height, 3.97 ft (1.210 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,320 ft^3/s (65.7 m^3/s) May 12, gage height, 7.40 ft (2.256 m); minimum, 59 ft^3/s (1.67 m^3/s) Sept. 22, gage height, 3.97 ft (1.210 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	92	182	171	200	180	130	194	835	1040	535	166	100
2	90	177	185	196	175	120	202	877	988	510	164	96
3	90	180	205	191	170	122	212	1000	933	485	158	94
4	88	188	256	191	150	125	221	1220	891	460	156	88
5	88	202	315	194	130	130	245	1480	856	435	153	86
6	88	224	360	190	135	131	278	1630	835	415	148	84
7	96	234	387	191	140	129	360	1680	835	405	148	80
8	106	238	405	191	145	128	500	1710	856	391	146	77
9	109	238	405	188	148	126	737	1810	928	382	146	73
10	111	238	400	182	148	126	1040	1980	1030	364	146	71
11	117	234	396	185	148	131	1320	2150	1040	342	143	69
12	122	228	387	182	148	125	1630	2300	996	337	141	69
13	136	221	378	180	148	124	1980	2180	884	346	131	69
14	151	215	351	175	148	124	2240	2080	807	324	124	69
15	182	212	337	182	148	124	2300	2240	724	298	122	68
16	196	208	328	188	153	124	2180	2210	676	282	126	66
17	196	202	310	191	156	124	1950	2060	670	263	124	64
18	194	199	290	202	158	129	1710	1940	664	252	122	64
19	188	191	274	208	155	136	1520	1780	648	241	122	64
20	191	177	263	205	150	143	1360	1620	622	231	122	62
21	224	169	252	205	140	153	1250	1510	622	234	122	61
22	252	158	240	200	135	161	1160	1410	646	238	120	61
23	256	158	231	199	140	169	1080	1340	670	234	117	62
24	245	160	231	202	143	174	1010	1330	664	208	120	69
25	231	180	231	199	143	177	1000	1390	648	231	122	73
26	224	188	228	195	148	180	988	1410	604	224	124	82
27	212	188	224	188	151	182	972	1320	556	215	122	94
28	205	182	224	188	151	182	919	1260	520	202	120	96
29	199	174	221	188	140	182	877	1250	495	191	117	98
30	194	171	221	188	---	182	842	1170	505	182	113	100
31	188	---	210	185	---	182	---	1100	---	171	106	---
TOTAL	5061	5922	8916	5949	4324	4475	32277	49272	22847	9628	4111	2309
MEAN	163	197	288	192	149	144	1076	1589	762	311	133	77.0
MAX	256	238	405	208	180	182	2300	2300	1040	535	166	100
MIN	88	158	171	175	130	120	194	835	495	171	106	61
CFSM	.47	.57	.83	.56	.43	.42	3.12	4.60	2.21	.90	.39	.22
IN.	.55	.64	.96	.64	.47	.48	3.48	5.31	2.46	1.04	.44	.25
AC-FT	10040	11750	17680	11800	8580	8880	64020	97730	45320	19100	8150	4580

CAL YR 1975 TOTAL 145659 MEAN 399 MAX 2880 MIN 68 CFSM 1.16 IN 15.69 AC-FT 288900
WTR YR 1976 TOTAL 155091 MEAN 424 MAX 2300 MIN 61 CFSM 1.23 IN 16.71 AC-FT 307600

12340000 BLACKFOOT RIVER NEAR BONNER, MT

LOCATION.--Lat 46°53'59", long 113°45'20", in SE¼SE¼NW¼ sec.9, T.13 N., R.17 W., Missoula County, Hydrologic Unit 17010203, Lolo National Forest, on right bank 5.6 mi (9.0 km) northeast of Bonner, 5.0 mi (8.0 km) downstream from Union Creek, and 7.3 mi (11.7 km) upstream from mouth.

DRAINAGE AREA.--2,290 mi^2 (5,931 km^2).

PERIOD OF RECORD.--July to November 1898, March 1899 to September 1901, May 1903 to January 1905, March to October 1905, October 1939 to current year. Monthly discharge only for some periods, published in WSP 1316.

REVISED RECORDS.--WSP 1216: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,344.76 ft (1,019.483 m) above mean sea level. July 7, 1898, to June 30, 1901, and May 15, 1903, to Oct. 31, 1905, nonrecording gage at site 7 mi (11 km) downstream at different datum. Oct. 4, 1939, to Sept. 30, 1955, nonrecording gage at site 1.3 mi (2.1 km) downstream at datum 21.82 ft (6.651 m) lower.

REMARKS.--Records excellent. Diversions for irrigation of about 20,000 acres (80.9 km^2) above station.

AVERAGE DISCHARGE.--40 years (1899-1901, 1903-4, 1939-76), 1,679 ft^3/s (47.55 m^3/s), 9.96 in/yr (253 mm/yr), -1,216,000 acre-ft/yr (1.50 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,200 ft^3/s (544 m^3/s) June 10, 1964, gage height, 10.89 ft (3.319 m); minimum daily, 200 ft^3/s (5.66 m^3/s) Jan. 4, 5, 1950.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,000 ft^3/s (396 m^3/s) May 15, gage height, 9.48 ft (2.890 m); minimum daily, 600 ft^3/s (17.0 m^3/s) Mar. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	835	1140	850	900	996	750	1580	3310	7560	3600	1250	897
2	835	1160	1310	850	979	650	1550	3660	7150	3570	1270	882
3	827	1200	1660	900	979	600	1450	4370	6860	3380	1280	858
4	835	1230	2590	987	750	700	1630	5530	6600	3230	1270	835
5	827	1250	2600	1040	700	750	1900	7260	6340	3130	1220	820
6	820	1260	2060	996	750	820	2230	8010	6280	3010	1210	835
7	922	1290	1780	996	800	827	2690	8250	6390	2910	1160	835
8	996	1270	1710	996	850	805	3170	8530	6500	2860	1140	835
9	979	1240	1860	987	971	805	3920	9540	7040	2820	1150	827
10	954	1220	1990	962	913	820	4400	10800	7400	2690	1130	835
11	954	1210	1840	979	905	1020	4980	12700	7530	2560	1120	812
12	996	1180	1700	962	938	1020	5790	13300	7080	2560	1090	797
13	1060	1140	1550	938	938	938	6660	12500	6300	2670	1070	790
14	1120	1140	1400	938	938	850	7010	12900	5570	2440	1050	783
15	1120	1150	1420	1000	905	812	6950	13800	5020	2230	1050	768
16	1120	1180	1320	1090	905	820	6510	13500	4730	2080	1060	761
17	1090	1170	1220	1340	905	1060	5890	12300	4820	1960	1060	746
18	1070	1120	1150	1700	882	1760	5280	11700	4790	1910	1030	739
19	1060	1010	1130	1470	850	2070	4790	11000	4510	1860	1020	732
20	1060	954	1120	1280	850	1620	4400	10500	4490	1820	1010	725
21	1170	938	1070	1130	835	1260	4110	9890	4710	1790	1010	718
22	1250	946	1050	1070	827	1130	3850	9390	4980	1760	1010	711
23	1270	1020	1120	1170	827	1300	3630	9310	4930	1660	1020	704
24	1230	1020	1230	1110	835	1360	3440	9690	4820	1600	1030	739
25	1190	1050	1200	1090	827	1210	3430	10600	4470	1550	1040	754
26	1190	1030	1160	1030	850	1120	3490	10400	4060	1530	1040	761
27	1170	996	1150	1070	850	1120	3490	9540	3740	1470	1030	761
28	1150	874	1120	1060	835	1120	3320	9390	3490	1400	1000	761
29	1120	800	1110	1040	805	1090	3200	9010	3340	1320	979	754
30	1110	750	1100	1030	---	1090	3170	8320	3400	1300	946	746
31	1120	---	1080	1030	---	1280	---	7810	---	1260	922	---
TOTAL	32450	32938	44650	33141	25195	32577	117910	296810	164980	69930	33667	23521
MEAN	1047	1098	1440	1069	869	1051	3930	9575	5499	2256	1086	784
MAX	1270	1290	2600	1700	996	2070	7010	13800	7560	3600	1280	897
MIN	820	750	850	850	700	600	1450	3310	3340	1260	922	704
CFSM	.46	.48	.63	.47	.38	.46	1.72	4.18	2.40	.99	.47	.34
IN.	.53	.54	.73	.54	.41	.53	1.92	4.82	2.68	1.14	.55	.38
AC-FT	64360	65330	88560	65740	49970	64620	233900	588700	327200	138700	66780	46650

CAL YR 1975 TOTAL 845145 MEAN 2315 MAX 16400 MIN 300 CFSM 1.01 IN 13.73 AC-FT 1676000
WTR YR 1976 TOTAL 907769 MEAN 2480 MAX 13800 MIN 600 CFSM 1.08 IN 14.75 AC-FT 1801000

12340500 CLARK FORK ABOVE MISSOULA, MT

LOCATION.--Lat 46°52'38", long 113°55'53", in NW¼NW¼NW¼ sec.19, T.13 N., R.18 W., Missoula County, Hydrologic Unit 17010204, on right bank 0.2 mi (0.3 km) downstream from county road bridge, 2.8 mi (4.5 km) east of Missoula, 2.8 mi (4.5 km) downstream from Milltown Dam, 3.0 mi (4.8 km) downstream from Blackfoot River, and at mile 361.6 (581.8 km).

DRAINAGE AREA.--5,999 mi^2 (15,537 km^2).

PERIOD OF RECORD.--March 1929 to current year. Monthly discharge only for some period, published in WSP 1316.

REVISED RECORDS.--WSP 1042: 1936. WSP 1152: 1942. WSP 1246: 1929-30, 1935, drainage area. WSP 1316: 1932-33.

GAGE.--Water-stage recorder. Datum of gage is 3,198.30 ft (974.842 m) above mean sea level (levels by Corps of Engineers). Prior to May 27, 1929, nonrecording gage.

REMARKS.--Records excellent. Diurnal fluctuation caused by powerplant at Bonner. Diversions for irrigation of about 120,000 acres (490 km^2) above station.

AVERAGE DISCHARGE.--47 years, 3,046 ft^3/s (86.26 m^3/s), 2,207,000 acre-ft/yr (2.72 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,300 ft^3/s (915 m^3/s) June 21, 1975, gage height, 13.75 ft (4.191 m); minimum, 115 ft^3/s (3.26 m^3/s) Oct. 25, 1943, gage height, 0.64 ft (0.195 m), powerplant shutdown; minimum daily, 340 ft^3/s (9.63 m^3/s) Sept. 27, 1937.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1908 reached a discharge of 48,000 ft^3/s (1,400 m^3/s), furnished by The Montana Power Co.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 25,500 ft^3/s (722 m^3/s) May 15, gage height, 12.00 ft (3.658 m); minimum, 511 ft^3/s (14.5 m^3/s) Mar. 2, gage height, 1.94 ft (0.591 m), powerplant shotdown.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2050	2960	1800	2100	2330	1880	3920	6630	13800	7270	2740	2190
2	2050	3070	3070	1900	2280	1430	3680	7210	13090	7170	2820	2130
3	2060	2990	5050	2100	2270	1160	3440	8410	12400	6860	2840	2030
4	2090	3080	6380	2440	1850	1420	3740	10100	12000	6480	2830	1980
5	2060	3180	5930	2710	1440	1520	4380	13000	11500	6350	2750	1920
6	2080	3300	4590	2560	1330	1870	5000	14100	11300	6070	2760	1940
7	2340	3240	4050	2450	1580	2000	5940	14200	11600	5800	2670	2020
8	2820	3180	3870	2380	1940	2140	6700	14700	12000	5620	2640	2050
9	2720	3030	4130	2380	2250	2190	7730	16300	12800	5190	2890	2030
10	2590	3000	4370	2350	2310	2230	8120	18600	13400	5180	2640	2020
11	2590	2970	4140	2290	2190	3330	8700	22000	13500	4980	2630	2010
12	2650	2890	3840	2380	2350	2660	9740	23700	13600	5210	2290	2050
13	2930	2780	3530	2200	2600	2390	10900	22300	12200	5450	2370	2190
14	3370	2810	3200	2080	2510	2280	11400	22600	11000	5070	2370	2180
15	3330	2840	3110	2310	2430	2190	11300	24800	9960	4660	2350	2150
16	3300	2940	2900	2720	2220	2100	10800	24300	9370	4430	2430	2080
17	3200	2880	2700	3840	2170	2620	9940	22400	9610	4220	2460	2070
18	3060	2850	2500	4020	2120	4360	9040	21400	9980	4020	2380	2050
19	3020	2630	2400	3430	2040	5520	8240	20400	9360	4100	2350	2120
20	2980	2330	2300	2880	2030	4020	7720	19200	9140	4210	2370	2260
21	3180	2170	2200	2600	1990	3530	7210	18200	10000	4140	2350	2230
22	3630	2260	2100	2500	1930	2990	6850	17200	10600	4050	2350	2190
23	3730	2430	2400	2580	1960	3310	6620	16900	10900	3770	2330	2110
24	3520	2650	2700	2580	2050	3260	6350	17300	10800	3610	2470	2150
25	3330	2540	3060	2440	2060	2650	6310	18700	9980	3470	2710	2220
26	3280	2540	2910	2280	2070	2510	6510	19100	9110	3450	2710	2210
27	3230	2490	2960	2380	2060	2730	6550	17400	8390	3260	2650	2170
28	3180	2270	2850	2590	2040	2680	6280	16900	7780	3120	2550	2130
29	3050	2090	2690	2540	1970	2580	6210	16800	7300	2930	2460	2120
30	3000	1720	2680	2480	---	2570	6310	15300	7140	2870	2370	2090
31	2940	---	2590	2430	---	2990	---	14200	---	2790	2290	---
TOTAL	89360	82110	103000	78920	60370	81110	215630	534350	323590	145800	78820	63090
MEAN	2883	2737	3323	2546	2082	2616	7188	17240	10790	4703	2543	2103
MAX	3730	3300	6380	4020	2600	5520	11400	24800	13800	7270	2890	2260
MIN	2050	1720	1800	1900	1330	1160	3440	6630	7140	2790	2290	1920
AC-FT	177200	162900	204300	156500	119700	160900	427700	1060000	641800	289200	156300	125100

CAL YR 1975 TOTAL 1776760 MEAN 4868 MAX 30800 MIN 680 AC-FT 3524000
WTR YR 1976 TOTAL 1856120 MEAN 5071 MAX 24800 MIN 1160 AC-FT 3682000

12342500 WEST FORK BITTERROOT RIVER NEAR CONNER, MT

LOCATION.--Lat 45°43'30", long 114°16'50", in SE¼NE¼NW¼ sec.26, T.1 S., R.22 W., Ravalli County, Hydrologic Unit 17010205, on right bank 0.6 mi (1.0 km) downstream from Painted Rocks Lake, 6.4 mi (10.3 km) upstream from Nez Perce Creek, 16.1 mi (25.9 km) southwest of Conner, and at mile 19.2 (30.9 km).

DRAINAGE AREA.--317 mi^2 (821 km^2).

PERIOD OF RECORD.--April 1941 to current year.

REVISED RECORDS.--WSP 1246: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,581.4 ft (1,396.41 m) above mean sea level (Forest Service bench mark).

REMARKS.--Records good. Flow regulated by Painted Rocks Lake (see p. 714). Diversions for irrigation of about 200 acres (0.81 km^2) above station.

AVERAGE DISCHARGE.--35 years, 296 ft^3/s (8.383 m^3/s), 214,500 acre-ft/yr (264 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,060 ft^3/s (115 m^3/s) May 9, 1947, gage height, 6.18 ft (1.884 m); minimum, 0.2 ft^3/s (0.006 m^3/s) Nov. 25, 1952; minimum daily, 0.6 ft^3/s (0.017 m^3/s) May 3-7, 1954

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,980 ft^3/s (84.4 m^3/s) May 11, gage height, 5.23 ft (1.594 m); minimum daily, 40 ft^3/s (1.13 m^3/s) Nov. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	299	274	42	64	66	69	284	507	1620	596	351	303
2	295	274	43	64	66	69	284	682	1500	569	336	299
3	295	274	42	64	67	69	284	926	1550	537	284	299
4	295	274	42	64	67	69	288	1380	1510	507	317	299
5	295	270	43	64	67	69	288	1510	1460	482	263	299
6	295	270	43	64	66	69	288	1460	1440	448	317	299
7	292	270	43	64	66	69	267	1470	1490	426	317	359
8	292	270	43	64	66	105	317	1700	1610	408	317	417
9	292	270	43	64	67	128	682	1970	1710	392	317	417
10	292	267	44	64	67	123	846	2290	1700	371	317	413
11	292	267	46	64	67	121	846	2840	1710	355	317	408
12	292	153	48	64	67	121	968	2620	1570	371	317	408
13	292	92	48	64	67	121	1080	2240	1410	361	317	404
14	288	63	47	64	67	121	1040	2560	1220	321	314	400
15	288	40	206	64	67	121	975	2650	1080	303	314	396
16	288	41	332	64	67	121	866	2380	1000	292	314	392
17	288	41	332	66	67	121	755	2280	1000	277	314	392
18	284	41	164	66	67	121	664	2440	961	295	314	387
19	284	41	63	66	67	128	591	2430	919	314	314	383
20	284	41	63	66	67	134	553	2340	975	288	314	306
21	284	41	63	66	67	134	512	2200	1050	299	314	237
22	284	41	63	66	67	134	472	2110	1030	277	314	237
23	281	41	63	66	67	73	448	2010	961	253	314	237
24	281	41	63	66	69	69	430	1990	872	243	310	237
25	281	41	63	66	69	142	463	2140	807	240	310	237
26	281	41	63	66	69	182	467	2120	743	226	310	233
27	281	41	64	66	69	243	458	2010	688	351	310	233
28	277	41	64	66	69	284	435	2140	641	421	306	233
29	277	41	64	66	69	284	426	2080	613	267	306	230
30	277	41	64	66	---	270	439	1880	607	351	306	200
31	277	---	64	66	---	284	---	1740	---	351	226	---
TOTAL	8903	3943	2475	2014	1950	4168	16716	61095	35497	11182	9611	9594
MEAN	287	131	79.8	65.0	67.2	134	557	1971	1183	361	310	320
MAX	299	274	332	66	69	284	1080	2840	1710	596	351	417
MIN	277	40	42	64	66	69	267	507	607	226	226	200
AC-FT	17660	7820	4910	3990	3870	8270	33160	121200	70410	22180	19060	19030

CAL YR 1975 TOTAL 125508 MEAN 344 MAX 2430 MIN 40 AC-FT 248900
WTR YR 1976 TOTAL 167148 MEAN 457 MAX 2840 MIN 40 AC-FT 331500

12344000 BITTERROOT RIVER NEAR DARBY, MT

LOCATION.--Lat 45°58'20", long 114°08'26", in SW¼SE¼NE¼ sec.36, T.3 N., R.21 W., Ravalli County, Hydrologic Unit 17010205, on left bank 45 ft (14 m) downstream from bridge on U.S. Highway 93, 0.3 mi (0.5 km) downstream from Chaffin Creek, 4.1 mi (6.6 km) southeast of Darby, and at mile 77.2 (124 km).

DRAINAGE AREA.--1,049 mi² (2,717 km²).

PERIOD OF RECORD.--April 1937 to current year. Monthly discharge only for April 1937, published in WSP 1316.

REVISED RECORDS.--WSP 1246: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,943.14 ft (1,201.869 m) above mean sea level. Prior to Aug. 2, 1939, nonrecording gage at highway bridge 45 ft (14 m) upstream at same datum.

REMARKS.--Records excellent. Some regulation by Painted Rocks Lake (see p. 714). Diversions for irrigation of about 5,000 acres (20 km²) above station. Ditch bypassing station irrigates about 500 acres (2.0 km²) below.

AVERAGE DISCHARGE.--39 years, 943 ft³/s (26.71 m³/s), 683,200 acre-ft/yr (842 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft³/s (326 m³/s) May 9, 1947, gage height, 8.18 ft (2.493 m); maximum gage height, 8.42 ft (2.566 m) June 17, 1974 (backwater from log jam); minimum discharge observed, about 71 ft³/s (2.01 m³/s) Feb. 9, 1939; minimum gage height, 0.48 ft (0.146 m) Oct. 29, 1971, result of dam closure on West Fork, and Mar. 3, 1976, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,080 ft³/s (257 m³/s) May 11, gage height, 7.29 ft (2.222 m); minimum, 131 ft³/s (3.71 m³/s) Mar. 3, gage height, 0.48 ft (0.146 m), result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	509	705	410	205	342	301	731	1690	4520	2720	867	550
2	504	706	999	291	366	218	706	2140	4350	2510	940	544
3	492	736	1060	400	350	217	706	2710	4400	2300	817	532
4	504	767	889	419	221	275	786	3830	4290	2250	824	532
5	542	760	831	435	177	273	968	4100	4200	2180	795	520
6	537	758	731	391	240	313	1260	4090	4260	2170	781	544
7	701	766	736	373	318	313	1450	4200	4550	2130	759	613
8	738	730	855	376	389	312	1770	4810	5080	2030	759	703
9	652	686	955	382	411	367	2270	5730	5430	1920	752	703
10	616	687	960	354	384	384	2350	6730	5100	1820	724	689
11	634	680	883	354	373	404	2410	8590	5230	1750	703	689
12	634	584	809	342	408	373	2720	7670	4580	1690	696	745
13	652	485	708	306	393	383	2990	6520	4070	1670	675	745
14	664	492	640	330	391	383	2880	7710	3520	1460	661	703
15	652	464	710	410	351	365	2760	7620	3180	1340	682	682
16	628	478	879	447	337	390	2460	6770	3070	1270	803	668
17	616	440	814	460	339	439	2180	6730	3470	1240	731	689
18	634	363	695	476	328	503	1970	7250	3240	1290	710	810
19	622	309	456	426	315	508	1800	7010	3220	1420	703	874
20	634	253	417	371	311	480	1730	6650	3920	1230	668	752
21	882	310	421	371	285	472	1630	6210	4280	1250	654	569
22	1270	299	417	382	291	461	1520	6070	4010	1160	634	538
23	957	429	514	460	308	474	1450	5710	3430	1040	696	544
24	841	444	577	408	312	365	1410	5830	2990	1000	752	526
25	802	404	533	390	307	445	1540	6330	2740	970	682	514
26	841	366	490	354	313	444	1540	5870	2550	889	675	502
27	750	366	480	408	326	534	1490	5630	2380	911	661	490
28	750	303	420	400	337	572	1410	6270	2380	992	627	472
29	717	278	441	390	285	572	1380	5700	2560	853	607	460
30	721	242	437	380	---	565	1460	5150	2710	817	594	437
31	726	---	389	360	---	635	---	4850	---	853	520	---
TOTAL	21422	15286	20556	11851	9508	12740	51727	176170	113700	47285	22152	18339
MEAN	691	510	663	382	328	411	1724	5683	3790	1525	715	611
MAX	1270	767	1060	476	411	635	2990	8590	5430	2720	940	874
MIN	492	242	389	205	177	217	706	1690	2380	817	520	437
AC-FT	42490	30320	40770	23510	18860	25270	102600	349400	225500	93790	43940	36380

CAL YR 1975 TOTAL 447783 MEAN 1227 MAX 7230 MIN 150 AC-FT 888200
WTR YR 1976 TOTAL 520736 MEAN 1423 MAX 8590 MIN 177 AC-FT 1033000

12345850 SLEEPING CHILD CREEK NEAR HAMILTON, MT

LOCATION.--Lat 46°07'58", long 114°03'26", in SE¼SW¼NW¼ sec.2, T.4 N., R.20 W., Ravalli County, Hydrologic Unit 17010205, Bitterroot National Forest, on right bank 5.8 mi (9.3 km) upstream from mouth and 10.8 mi (17.4 km) southeast of Hamilton.

DRAINAGE AREA.--62.6 mi^2 (162 km^2).

PERIOD OF RECORD.--March 1958 to October 1959, September 1961 (occasional discharge measurements). May 1973 to current year (no winter records).

GAGE.--Nonrecording and crest-stage gages. Prior to May 3, 1973, staff gage at different site and datum. Altitude of gage is 4,090 ft (1,247 m), from topographic map.

REMARKS.--Records fair.

COOPERATION.--Gage readings furnished by U.S. Forest Service.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 825 ft^3/s (23.4 m^3/s) May 14, 1976, gage height, 4.95 ft (1.509 m); minimum observed, 5.2 ft^3/s (0.15 m^3/s) Nov. 4, 1974, gage height, 1.56 ft (0.475 m), result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1972 reached a stage of 6.25 ft (1.905 m) present datum, from flood marks, discharge, about 1,500 ft^3/s (42.5 m^3/s) from rating curve extended above 710 ft^3/s (20.1 m^3/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 825 ft^3/s (23.4 m^3/s) May 14, gage height, 4.95 ft (1.509 m); minimum observed, 19 ft^3/s (0.54 m^3/s) Feb. 23, result of discharge measurement; minimum gage height, 1.86 ft (0.567 m), Feb. 23, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	40			---	---	---	120	364	108	47	25
2	22	40			---	---	---	145	340	100	48	23
3	22	40			---	---	---	220	325	96	40	23
4	22	40			---	---	---	268	295	92	40	30
5	23	40			---	---	---	255	280	89	61	42
6	36	44			---	---	---	265	295	86	50	40
7	74	---			---	---	---	310	278	81	45	31
8	50	---			---	---	---	364	268	80	40	28
9	36	---			---	---	---	470	268	76	38	26
10	36	---			---	---	---	578	268	74	38	23
11	40	---			---	---	---	690	325	73	36	27
12	40	---			---	---	---	570	233	90	33	40
13	45	---			---	---	---	590	230	74	31	30
14	45	---			---	---	---	750	195	71	30	26
15	45	---			---	---	---	690	188	62	35	25
16	43	---			---	---	---	630	181	61	48	23
17	42	---			---	---	---	670	201	57	46	28
18	45	---			---	---	---	702	181	81	40	31
19	48	---			---	---	---	690	167	73	36	31
20	50	---			---	---	---	630	230	68	33	31
21	52	---			---	---	86	622	181	68	30	29
22	45	---			---	---	83	570	181	61	30	25
23	45	---			† 19	---	83	550	163	57	55	22
24	36	---			---	24	86	570	138	55	50	22
25	36	---			---	---	93	670	130	53	50	22
26	37	---			---	---	86	582	131	52	40	22
27	36	---			---	---	84	610	124	48	36	22
28	40	---			---	---	81	590	118	42	33	22
29	40	---			---	---	81	530	115	45	31	21
30	40	---			---	---	93	385	112	46	29	20
31	40	---			---	---	---	385	---	46	27	---
TOTAL	1233	---			---	---	---	15671	6513	2165	1226	810
MEAN	39.8	---			---	---	---	506	217	69.8	39.5	27.0
MAX	74	---			---	---	---	750	364	108	61	42
MIN	22	---			---	---	---	120	112	42	27	20
CFSM	.64	---			---	---	---	8.08	3.47	1.12	.63	.43
IN.	.73	---			---	---	---	9.31	3.87	1.29	.73	.48
AC-FT	2450	---			---	---	---	31080	12920	4290	2430	1610

† Result of discharge measurement.

12346500 SKALKAHO CREEK NEAR HAMILTON, MT

LOCATION.--Lat 46°09'43", long 113°57'08", in SW¼NE¼ sec.27, T.5 N., R.19 W., Ravalli County, Hydrologic Unit 17010205, Bitterroot National Forest, on right bank 2 mi (3 km) downstream from Daly Creek, 11.4 mi (18.3 km) southeast of Hamilton, and at mile 12.0 (19.3 km).

DRAINAGE AREA.--87.8 mi^2 (227.4 km^2).

PERIOD OF RECORD.--December 1948 to September 1953, August 1957 to current year. April 1920 to September 1924 at site 3 mi (5 km) downstream; records not equivalent owing to inflow.

GAGE.--Water-stage recorder. Datum of gage is 4,393.16 ft (1,339.035 m) above mean sea level (Bureau of Public Roads bench mark).

REMARKS.--Records good except those for winter period, which are poor. During irrigation season flow is supplemented by releases from Kent and Dam Creek Lakes, combined capacity, 200 acre-ft (247,000 m^3).

AVERAGE DISCHARGE.--23 years, (1949-53, 1957-76), 95.8 ft^3/s (2.713 m^3/s), 14.82 in/yr (376 mm/yr), 69,410 acre-ft/yr (85.6 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,210 ft^3/s (34.3 m^3/s) June 1, 1972, gage height, 4.84 ft (1.475 m); maximum gage height recorded, 5.18 ft (1.579 m) Feb. 29, 1960 (backwater from ice); minimum discharge recorded, 10 ft^3/s (0.28 m^3/s) Apr. 2, 1953, gage height, 1.26 ft (0.384 m), backwater from ice, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 400 ft^3/s (11.3 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 11	0630	580	16.4	3.96	1.207	May 25	0700	*714	20.2	*4.19	1.277
May 14	1900	648	18.4	4.08	1.244	June 8	2100	648	18.4	4.08	1.244
May 17	2300	642	18.2	4.07	1.241						

Minimum discharge, 33 ft^3/s (0.93 m^3/s) Feb. 29, Mar. 12, gage height, 1.90 ft (0.579 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	62	55	47	44	38	42	113	505	350	121	71
2	56	62	60	45	44	36	41	131	505	330	118	68
3	56	65	65	50	42	34	41	166	510	313	111	68
4	59	69	62	55	40	36	45	220	500	306	108	67
5	57	69	57	61	38	40	51	228	491	292	113	65
6	60	69	56	54	36	45	60	230	500	281	107	76
7	94	68	56	53	40	46	69	245	540	271	105	72
8	76	65	56	51	45	44	83	313	570	254	105	65
9	68	61	61	51	50	44	95	370	595	242	103	64
10	67	64	59	48	55	43	92	424	575	225	100	62
11	67	62	56	48	55	39	103	535	585	218	97	65
12	67	62	55	49	54	38	118	478	515	242	92	72
13	71	62	55	48	53	37	131	464	464	205	91	65
14	72	64	52	49	50	37	129	600	428	185	91	62
15	69	64	51	48	45	37	127	550	402	176	92	60
16	67	64	50	48	42	37	121	515	398	170	94	60
17	65	60	49	51	42	39	116	555	394	164	89	61
18	69	53	48	49	42	41	113	575	386	166	91	67
19	67	52	47	47	41	39	108	540	390	176	88	65
20	69	50	46	46	40	38	105	555	437	162	85	62
21	81	48	47	45	40	38	102	540	419	158	82	60
22	76	50	48	49	40	38	99	510	398	148	81	60
23	68	54	49	51	39	38	97	491	390	140	92	59
24	67	58	50	47	39	38	97	535	378	140	88	59
25	65	61	51	46	39	38	100	630	358	138	83	59
26	67	60	51	54	39	38	97	565	330	131	88	57
27	64	56	48	48	39	38	94	580	320	125	83	56
28	62	55	48	46	39	38	91	630	316	121	81	56
29	64	50	48	45	39	38	92	555	330	119	76	55
30	64	45	48	45	---	39	100	540	354	116	75	55
31	64	---	48	44	---	41	---	535	---	118	74	---
TOTAL	2075	1784	1632	1518	1251	1210	2759	13918	13283	6182	2904	1893
MEAN	66.9	59.5	52.6	49.0	43.1	39.0	92.0	449	443	199	93.7	63.1
MAX	94	69	65	61	55	46	131	630	595	350	121	76
MIN	56	45	46	44	36	34	41	113	316	116	74	55
CFSM	.76	.68	.60	.56	.49	.44	1.05	5.11	5.05	2.27	1.07	.72
IN.	.88	.76	.69	.64	.53	.51	1.17	5.90	5.63	2.62	1.23	.80
AC-FT	4120	3540	3240	3010	2480	2400	5470	27610	26350	12260	5760	3750

CAL YR 1975 TOTAL 41414 MEAN 113 MAX 690 MIN 14 CFSM 1.29 IN 17.55 AC-FT 82140
WTR YR 1976 TOTAL 50409 MEAN 138 MAX 630 MIN 34 CFSM 1.57 IN 21.36 AC-FT 99990

12353000 CLARK FORK BELOW MISSOULA, MT

LOCATION.--Lat 46°52'09", long 114°07'33", in NW¼NE¼SE¼ sec.21, T.13 N., R.20 W., Missoula County, Hydrologic Unit 17010204, on right bank 1.0 mi (1.6 km) downstream from Bitterroot River, 4.5 mi (7.2 km) west of Missoula, and at mile 349.5 (562.3 km).

DRAINAGE AREA.--9,003 mi² (23,318 km²).

PERIOD OF RECORD.--October 1929 to current year.

REVISED RECORDS.--WSP 1042: 1931. WSP 1246: Drainage area. WSP 1316: 1932(M), 1935(M), 1946(M).

GAGE.--Water-stage recorder. Datum of gage is 3,083.88 ft (939.967 m) above mean sea level (levels by Corps of Engineers).

REMARKS.--Records excellent. Some diurnal fluctuation at low flow caused by powerplant at Bonner 14.9 mi (24.0 km) upstream. Diversions for irrigation of about 235,000 acres (951 km²) above station.

AVERAGE DISCHARGE.--47 years, 5,549 ft³/s (157.1 m³/s), 4,020,000 acre-ft/yr (4.96 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 52,800 ft³/s (1,500 m³/s) May 23, 1948, gage height, 12.08 ft (3.682 m); minimum, 388 ft³/s (11.0 m³/s) Jan. 18, 1933; minimum gage height, 0.30 ft (0.091 m) about Jan. 16, 1954, Mar. 24, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 43,600 ft³/s (1,230 m³/s) May 15, gage height, 10.96 ft (3.341 m); minimum, 1,970 ft³/s (55.8 m³/s) Mar.2, gage height, 1.55 ft (0.472 m), result of freezeup and regulation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3420	5220	3090	3560	3840	3250	5190	9930	26300	15200	4460	3560
2	3440	5310	5540	3030	3760	2650	5410	11000	24500	14700	4650	3400
3	3470	5340	8740	3230	3740	2330	5100	13400	23400	13600	4890	3280
4	3490	5670	9960	3710	3060	2500	5290	16400	22800	12800	4760	3180
5	3540	5870	9860	4100	2450	2690	6010	21200	21900	12500	4630	3080
6	3580	5980	8190	4080	2300	3040	6980	22500	21600	12300	4580	3090
7	3930	5900	7300	3930	2480	3260	8400	22800	22400	12000	4400	3220
8	4940	5770	6960	3890	2950	3370	9820	24000	24000	11800	4320	3280
9	4910	5510	7240	3910	3650	3510	11700	27100	26600	11100	4500	3310
10	4630	5360	7620	3850	3820	3720	12900	31300	28000	10500	4340	3310
11	4560	5290	7390	3780	3740	4890	13400	36400	27800	10200	4240	3330
12	4710	5150	6930	3720	3890	4280	14800	40800	27300	10600	3970	3380
13	5000	4940	6390	3630	4200	3850	17000	38100	23900	11400	3840	3540
14	5440	4820	5800	3530	4040	3720	18000	37100	21100	10000	3800	3600
15	5440	4850	5540	3840	3930	3600	17600	42600	18500	8810	3800	3560
16	5390	4980	5410	4500	3720	3490	16800	41900	17200	8160	3970	3450
17	5240	4940	5030	5610	3670	3930	15300	38300	19400	7650	4160	3440
18	5100	4780	4610	5950	3600	5460	14000	37000	20500	7300	4030	3490
19	5070	4460	4280	5360	3470	7040	12700	36100	18700	7300	3970	3840
20	5120	4030	4010	4670	3400	5870	11900	34400	19200	7510	3930	4060
21	5690	3760	3870	4220	3330	4960	11100	32800	22100	7300	3890	3950
22	6640	3760	3710	3970	3250	4610	10500	31000	24000	7190	3890	3760
23	7100	4040	3870	4220	3300	4710	10000	30500	23100	6700	3870	3630
24	6470	4420	4690	4320	3380	4800	9580	30900	20600	6280	4040	3610
25	6060	4400	5000	4100	3450	4300	9540	33000	18200	6230	4280	3650
26	6030	4300	4850	3890	3510	3910	10000	34400	16400	6030	4280	3610
27	6030	4180	4870	3910	3470	4140	10100	31400	14800	5560	4260	3540
28	5820	3690	4610	4220	3450	4140	9720	30800	13900	5220	4160	3490
29	5510	3370	4440	4160	3380	4060	9480	31700	13700	4960	3990	3440
30	5340	3130	4440	4080	---	4030	9440	28900	14400	4780	3840	3380
31	5240	---	4320	3970	---	4320	---	26900	---	4540	3710	---
TOTAL	156350	143220	178560	126940	100230	124430	327760	924630	636300	280220	129450	104470
MEAN	5044	4774	5760	4095	3456	4014	10930	29830	21210	9039	4176	3482
MAX	7100	5980	9960	5950	4200	7040	18000	42600	28000	15200	4890	4060
MIN	3420	3130	3090	3030	2300	2330	5100	9930	13700	4540	3710	3080
AC-FT	310100	284100	354200	251800	198800	246800	650100	1834000	1262000	555800	256800	207200

CAL YR 1975 TOTAL 3018940 MEAN 8271 MAX 47700 MIN 1120 AC-FT 5988000
WTR YR 1976 TOTAL 3232560 MEAN 8832 MAX 42600 MIN 2300 AC-FT 6412000

12353280 NINEMILE CREEK NEAR HUSON, MT

LOCATION.--Lat 47°03'47", long 114°24'46", near center of NW¼ sec.17, T.15 N., R.22 W., Missoula County, Hydrologic Unit 17010204, on right bank, 0.7 mi (1.1 km) southwest of Ninemile ranger station, 2.8 mi (4.5 km) upstream from mouth, and 4.8 mi (7.7 km) northwest of Huson.

DRAINAGE AREA.--170 mi^2 (440 km^2).

PERIOD OF RECORD.--August 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,027.66 ft (922.831 m) above mean sea level (Missoula County bench mark).

REMARKS.--Records good except those for winter period, which are poor. Diversions for irrigation of about 2,100 acres (85.0 km^2) above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 1,700 ft^3/s (48.1 m^3/s) Jan. 16, 1974; maximum gage height, 6.7 ft (2.04 m) Jan. 15, 1974 (ice jam); minimum discharge, 9.4 ft^3/s (0.27 m^3/s) Dec. 23, 1974, gage height, 3.14 ft (0.957 m), result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 650 ft^3/s (18.4 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 9	0700	835	23.6	5.47	1.667	May 11	1500	*1320	37.4	*6.17	1.881
Apr. 13	0500	966	27.4	5.64	1.719	May 14	1400	994	28.2	5.74	1.750

Minimum discharge, 28 ft^3/s (0.79 m^3/s) Nov. 19 (result of freezeup); gage height, 3.22 ft (0.981 m) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	43	45	55	56	44	168	284	348	146	58	38
2	29	46	80	50	54	42	166	392	326	140	65	36
3	29	58	130	52	52	40	175	520	304	136	62	34
4	38	61	224	53	50	42	206	612	278	129	65	34
5	37	59	240	54	47	44	275	636	251	124	60	34
6	34	56	171	55	48	46	384	588	232	118	58	41
7	52	58	149	56	49	48	490	588	232	114	58	44
8	53	55	130	56	50	49	660	730	235	110	60	39
9	43	53	124	55	51	50	807	966	255	106	60	38
10	41	53	118	54	52	58	674	1080	268	102	60	38
11	41	53	114	53	53	73	681	1230	258	94	58	36
12	46	50	113	52	54	65	842	953	242	116	55	38
13	44	47	105	50	55	62	934	754	229	106	52	38
14	44	49	100	54	55	59	786	953	216	96	52	38
15	43	53	95	56	53	58	667	887	199	94	55	36
16	40	59	90	58	52	70	525	737	213	91	60	36
17	38	55	85	66	50	88	432	693	278	87	57	38
18	37	43	80	72	50	118	380	667	261	85	52	38
19	35	42	75	70	49	130	339	612	245	82	52	36
20	38	40	70	60	47	118	315	575	235	76	54	36
21	46	42	72	50	47	109	297	536	229	80	52	36
22	49	44	74	60	47	111	281	504	229	74	49	34
23	46	46	76	78	47	118	263	499	226	71	54	34
24	41	49	78	69	47	116	254	531	210	74	52	34
25	41	46	80	66	49	111	281	546	199	74	49	36
26	47	46	78	62	49	107	278	499	185	67	52	34
27	46	44	72	64	49	109	263	451	175	62	50	33
28	43	42	68	61	47	111	249	456	167	60	47	33
29	43	40	64	59	46	114	235	430	160	58	44	33
30	41	38	62	59	---	128	240	392	153	58	42	31
31	43	---	60	58	---	151	---	379	---	57	39	---
TOTAL	1279	1470	3122	1817	1455	2589	12547	19680	7038	2887	1683	1084
MEAN	41.3	49.0	101	58.6	50.2	83.5	418	635	235	93.1	54.3	36.1
MAX	53	61	240	78	56	151	934	1230	348	146	65	44
MIN	29	38	45	50	46	40	166	284	153	57	39	31
CFSM	.24	.29	.59	.34	.30	.49	2.46	3.74	1.38	.55	.32	.21
IN.	.28	.32	.68	.40	.32	.57	2.75	4.31	1.54	.63	.37	.24
AC-FT	2540	2920	6190	3600	2890	5140	24890	39040	13960	5730	3340	2150

CAL YR 1975 TOTAL 48808 MEAN 134 MAX 990 MIN 14 CFSM .79 IN 10.68 AC-FT 96810
WTR YR 1976 TOTAL 56051 MEAN 155 MAX 1230 MIN 29 CFSM .91 IN 12.40 AC-FT 112400

12354500 CLARK FORK AT ST. REGIS, MT

LOCATION.--Lat 47°18'07", long 115°05'11", near center of SW¼ sec.19, T.18 N., R.27 W., Mineral County, Hydrologic Unit 17010204, on left bank at St. Regis, 0.4 mi (0.6 km) downstream from St. Regis River, and at mile 270.3 (434.9 km).

DRAINAGE AREA.--10,709 mi^2 (27,736 km^2).

PERIOD OF RECORD.--October 1910 to current year. Monthly discharge only for some periods, published in WSP 1316.

REVISED RECORDS.--WSP 1246: Drainage area. WSP 1316: 1916-17, 1920, 1929-31(M), 1933(M).

GAGE.--Water-stage recorder. Datum of gage is 2,600.37 ft (792.593 m) above mean sea level (levels by Corps of Engineers). Prior to Nov. 29, 1933, nonrecording gage at same site and datum.

REMARKS.--Records good. Diversions for irrigation of about 244,000 acres (987 km^2) above station.

AVERAGE DISCHARGE.--66 years, 7,629 ft^3/s (216.1 m^3/s), 5,527,000 acre-ft/yr (6.81 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 68,900 ft^3/s (1,950 m^3/s) May 24, 1948, gage height, 19.96 ft (6.084 m), from graph based on gage readings; minimum, 1,000 ft^3/s (28.3 m^3/s) Dec. 17, 1940, gage height, 3.36 ft (1.024 m), but may have been less during periods of ice effect in several years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 55,000 ft^3/s (1,558 m^3/s) May 16, gage height, 18.07 ft (5.508 m); minimum, 3,110 ft^3/s (88.1 m^3/s) Feb. 6, gage height, 5.18 ft (1.579 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4320	6260	4150	5310	5120	4280	5910	13300	33500	18700	5870	4640
2	4270	6280	5800	4580	4980	3940	6830	14900	32000	18800	6060	4450
3	4280	6870	10100	4420	4910	3450	6690	17200	30100	17500	6180	4280
4	4410	6980	14600	4560	4600	3310	6660	20600	28900	16500	6270	4120
5	4470	7180	15400	5000	3980	3370	7270	25000	28000	15900	6100	4020
6	4450	7260	12900	5310	3420	3670	8480	28400	27300	15600	5990	3960
7	4590	7350	10800	5170	3530	3960	9990	29700	27600	15300	5890	4020
8	5030	7210	9790	5060	3750	4110	12400	31500	29200	15000	5690	4080
9	5790	7020	9590	5030	4320	4230	15000	35300	32100	14500	5600	4120
10	5650	6800	9810	5010	4800	4400	17000	40300	34400	13400	5780	4120
11	5450	6630	9850	4970	4890	4910	17900	48200	34500	12800	5510	4120
12	5520	6490	9470	4870	4860	5890	19500	51700	33800	12800	5400	4120
13	5650	6290	8920	4750	5090	5090	21900	51800	31900	13700	5030	4180
14	5920	6090	8270	4660	5290	4800	23400	49800	28300	13200	4950	4340
15	6290	6080	7770	4680	5150	4650	23400	52000	25400	11700	4950	4360
16	6280	6250	7350	5220	4960	4550	22300	54400	23200	10700	5110	4300
17	6220	6270	7100	5980	4800	4590	20700	51400	23800	9960	5220	4280
18	6080	6090	6700	7150	4710	5290	19000	48000	26100	9410	5290	4260
19	5970	5840	6130	7200	4590	7190	17300	46600	25200	9020	5140	4340
20	6010	5470	5770	6580	4450	8000	16000	44900	24300	9070	5070	4700
21	6280	5060	5430	5940	4360	6750	15100	42500	26100	9090	5050	4880
22	6850	4830	5210	5530	4280	6290	14200	40100	28500	8880	4990	4740
23	7700	4920	5220	5430	4210	5930	13500	39200	29000	8600	5010	4570
24	7740	5260	5680	5630	4240	6190	12900	39500	26700	8120	5010	4450
25	7260	5590	6310	5590	4350	6020	12800	40700	23900	7930	5180	4470
26	7010	5490	6410	5350	4480	5440	13000	42000	21500	7730	5420	4470
27	7010	5410	6350	5150	4480	5300	13200	41100	19600	7420	5400	4410
28	6900	5150	6230	5260	4420	5390	13100	39000	18100	6910	5350	4320
29	6640	4550	5900	5450	4350	5360	12700	39100	17500	6560	5180	4260
30	6410	4180	5840	5360	---	5280	12700	37700	17800	6320	4970	4180
31	6330	---	5770	5240	---	5370	---	34900	---	6100	4800	---
TOTAL	182780	181150	244620	165440	131370	157000	430830	1190800	808300	357210	167460	129560
MEAN	5896	6038	7891	5337	4530	5065	14360	38410	26940	11520	5402	4319
MAX	7740	7350	15400	7200	5290	8000	23400	54400	34500	18800	6270	4880
MIN	4270	4180	4150	4420	3420	3310	5910	13300	17500	6100	4800	3960
CFSM	.55	.56	.74	.50	.42	.47	1.34	3.59	2.52	1.08	.50	.40
IN.	.63	.63	.85	.57	.46	.55	1.50	4.14	2.81	1.24	.58	.45
AC-FT	362500	359300	485200	328200	260600	311400	854600	2362000	1603000	708500	332200	257000

CAL YR 1975 TOTAL 3763780 MEAN 10310 MAX 53700 MIN 1660 CFSM .96 IN 13.07 AC-FT 7465000
WTR YR 1976 TOTAL 4146520 MEAN 11330 MAX 54400 MIN 3310 CFSM 1.06 IN 14.40 AC-FT 8225000

12355000 FLATHEAD RIVER AT FLATHEAD, BRITISH COLUMBIA

(International gaging station)

LOCATION.--Lat 49°00'02", long 114°28'35" (revised), Hydrologic Unit 17010206, on right bank 45 ft (14 m) north of international boundary at Flathead, British Columbia, 1.6 mi (2.6 km) upstream from Sage Creek, 6.5 mi (10.5 km) northwest of Trail Creek, Mt., and at mile 216.6 (348.5 km).

DRAINAGE AREA.--427 mi^2 (1,106 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1929 to current year (no winter records prior to 1952). Prior to October 1934, published as Flathead River near Trail Creek, Mt. October 1970 to September 1972, published as North Fork Flathead River at Flathead, British Columbia.

REVISED RECORDS.--WSP 1092: 1933 (maximum gage height only).

GAGE.--Water-stage recorder. Datum of gage is 3,968.16 ft (1,209.495 m) above mean sea level. Prior to Sept. 1, 1949, nonrecording gage, and Sept. 1, 1949, to Oct. 4, 1964, water-stage recorder, at site 1,200 ft (370 m) upstream at datum 7.80 ft (2.377 m) higher. Oct. 5, 1964, to Aug. 1, 1973, water-stage recorder at site on left bank 155 ft (47 m) upstream at datum 1.42 ft (0.433 m) lower.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

AVERAGE DISCHARGE.--25 years (1951-76), 998 ft^3/s (28.26 m^3/s), 31.74 in/yr (806 mm/yr), 723,100 acre-ft/yr (892 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,300 ft^3/s (462 m^3/s) June 8, 1964, gage height, 8.00 ft (2.438 m), in gage well, 8.6 ft (2.62 m), from outside floodmarks, site and datum then in use, from rating curve extended above 8,000 ft^3/s (230 m^3/s) on basis of slope-area measurement of peak flow; minimum observed, 65 ft^3/s (1.84 m^3/s) Apr. 9, 1929, but may have been less during periods of no winter record.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,800 ft^3/s (249 m^3/s) May 11, gage height, 6.30 ft (1.920 m); minimum daily, 131 ft^3/s (3.71 m^3/s) Mar. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	276	390	512	334	242	174	206	1680	2920	2410	643	626
2	274	397	738	319	242	145	202	2450	2630	2050	627	589
3	273	589	1180	330	239	131	201	3340	2400	1840	643	571
4	365	1010	1780	350	195	174	208	4160	2250	1700	618	562
5	414	1280	1610	370	150	232	237	4070	2160	1750	656	535
6	418	1200	1220	354	189	273	286	4180	2230	1680	763	528
7	482	1080	1060	324	258	273	396	4660	2230	1670	721	526
8	460	921	938	311	288	257	579	5490	2510	1710	861	515
9	427	823	1350	316	315	242	955	6450	3310	1650	1890	498
10	404	731	1840	312	302	226	1370	6820	3730	1510	1600	478
11	405	675	1520	315	286	209	1740	8220	3140	1380	1370	466
12	399	630	1270	304	294	180	2120	5980	3010	1360	1190	467
13	390	586	941	296	302	192	2390	5290	2800	1520	1070	456
14	384	567	850	283	299	192	2190	6420	2440	1370	1000	436
15	377	622	869	283	283	186	1800	5230	2240	1260	986	417
16	369	675	700	300	268	194	1490	4380	2320	1160	975	406
17	360	614	702	303	257	205	1280	4560	2500	1110	1110	399
18	365	535	779	305	257	223	1140	4200	2590	1080	947	392
19	402	449	811	290	253	219	1060	3960	2800	1050	860	378
20	463	418	776	276	253	217	1010	4550	2940	1000	1030	363
21	444	425	703	269	246	209	952	4110	2840	953	1100	350
22	419	511	650	267	234	203	864	3680	2670	898	990	340
23	398	510	619	281	244	207	837	3920	2490	824	953	332
24	379	464	599	274	245	207	882	4730	2510	786	910	324
25	376	430	525	273	242	206	979	4770	2330	760	864	326
26	371	434	514	268	231	202	949	3800	2150	738	933	331
27	360	404	506	278	226	200	930	3320	1900	709	880	328
28	349	348	475	273	191	198	882	4430	1830	679	789	294
29	357	348	462	263	211	193	909	4220	1910	651	737	282
30	379	376	425	268	---	190	1140	3410	2270	659	686	274
31	410	---	395	256	---	195	---	3200	---	662	649	---
TOTAL	11949	18442	27319	9245	7242	6354	30184	139680	76070	38669	29051	12789
MEAN	385	615	881	298	250	205	1006	4506	2536	1247	937	426
MAX	482	1280	1840	370	315	273	2390	8220	3730	2410	1890	626
MIN	273	348	395	256	150	131	201	1680	1830	651	618	274
CFSM	.86	1.37	1.96	.66	.56	.46	2.24	10.0	5.64	2.77	2.08	.95
IN.	.99	1.52	2.26	.76	.60	.53	2.50	11.55	6.29	3.20	2.40	1.06
AC-FT	23700	36580	54190	18340	14360	12600	59870	277100	150900	76700	57620	25370

CAL YR 1975 TOTAL 410904 MEAN 1126 MAX 10200 MIN 81 CFSM 2.50 IN 33.97 AC-FT 815000
WTR YR 1976 TOTAL 406994 MEAN 1112 MAX 8220 MIN 131 CFSM 2.47 IN 33.64 AC-FT 807300

12355000 FLATHEAD RIVER AT FLATHEAD, BRITISH COLUMBIA--Continued
WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1970, 1975 to current year.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1974 to current year.
TURBIDITY: April 1975 to current year.
WATER TEMPERATURES: November 1974 to current year.
SUSPENDED SEDIMENT DISCHARGE: April 1975 to current year.
INSTRUMENTATION.--Temperature recorder since October 1, 1975.
REMARKS.--Temperature recorder inoperative January 18 to February 24, March 6-25.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 309 micromhos Jan. 12, 28, 1975; minimum daily, 130 micromhos May 20, 1976.
TURBIDITY: Maximum daily, 240 JTU June 20, 1975; minimum daily, 0 JTU on many days both years.
WATER TEMPERATURES: Maximum daily, 16.0°C July 26, Aug. 3, 6, 7, 1976; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily, 1,310 mg/L June 20, 1975; minimum daily, 1 mg/L on many days both years.
SEDIMENT LOADS: Maximum daily, 36,100 tons (32,700 tonnes) June 20, 1975; minimum daily, 0.45 ton (0.41 tonne) Apr. 21, 1975.
EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 284 micromhos Feb. 5; minimum daily, 130 micromhos May 20.
TURBIDITY: Maximum daily, 150 JTU May 9-11; minimum daily, 0 JTU on many days throughout the year.
WATER TEMPERATURES: Maximum daily, 16.0°C July 26, Aug. 3, 6, 7; minimum daily, 0.0°C on several days during November to January.
SEDIMENT CONCENTRATIONS: Maximum daily, 800 mg/L May 11; minimum daily, 1 mg/L on several days throughout year.
SEDIMENT LOADS: Maximum daily, 17,800 tons (16,100 tonnes) May 11; minimum daily, 0.49 ton (0.44 tonne) Mar. 12.
REVISION.--The figure of suspended sediment concentration for June 20, 1975 (1,000 hours) has been revised to 1,610 mg/L, superseding figure previously published.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	FECAL COLIFORM (COL. PER 100 ML)
OCT										
17...	1430	378	215	8.3	16.0	8.5	0	10.4	103	<1
NOV										
14...	1100	560	195	8.2	5.5	2.5	1	11.9	101	<1
DEC										
04...	1100	1760	175	8.1	4.0	1.0	45	11.5	92	12
JAN										
22...	1015	267	230	8.0	-10.0	.0	0	12.7	100	2
FEB										
25...	1100	244	220	8.3	.0	.0	1	12.6	99	2
MAR										
25...	1130	204	255	8.4	1.0	1.5	1	12.4	106	16
APR										
28...	1200	899	248	8.3	8.0	3.5	9	11.8	103	<1
MAY										
20...	1130	4930	130	7.4	5.5	5.5	35	10.7	99	16
JUN										
17...	1130	2530	135	--	12.0	6.5	6	10.8	102	44
JUL										
23...	1100	907	185	8.5	26.0	11.0	1	10.0	105	<1
AUG										
19...	0915	900	210	8.3	12.0	8.5	1	10.2	101	5
SEP										
23...	1130	332	225	8.5	17.0	9.0	1	10.4	104	<1

DATE	FECAL STREPTOCOCCI KF AGAR (COL. PER 100 ML)	HARDNESS (CA+MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	TOTAL ACIDITY AS H+ (MG/L)	TOTAL ACIDITY AS CACO3 (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)
OCT										
17...	1	130	0	.0	.0	39	8.3	1.0	.0	.4
NOV										
14...	1	120	0	.1	5.0	34	8.1	.3	.0	.3
DEC										
04...	40	100	5	.1	5.0	30	6.5	.8	.0	.4
JAN										
22...	2	140	0	.0	.0	42	8.9	1.0	.0	.2
FEB										
25...	<1	140	3	.0	.0	41	8.6	.9	.0	.3
MAR										
25...	4	150	6	.0	.0	44	8.9	1.0	.0	.3
APR										
28...	4	130	1	.1	5.0	38	8.8	.5	.0	.3
MAY										
20...	8	87	5	.1	5.0	26	5.3	.4	.0	.2
JUN										
17...	9	96	9	.0	.0	29	5.8	.4	.0	.3
JUL										
23...	28	120	6	.0	.0	37	6.9	.6	.0	.3
AUG										
19...	17	130	10	.0	.0	39	6.9	.5	.0	.3
SEP										
23...	8	140	0	.0	.0	40	9.0	.7	.0	.4

12355000 FLATHEAD RIVER AT FLATHEAD, BRITISH COLUMBIA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)
OCT									
17...	160	0	1.3	5.8	1.6	.2	4.0	139	.19
NOV									
14...	147	0	1.5	5.8	.6	.1	3.5	133	.18
DEC									
04...	118	0	1.5	5.4	.9	.1	4.0	104	.14
JAN									
22...	173	0	2.8	5.3	.3	.1	3.7	141	.19
FEB									
25...	164	0	1.3	5.8	.8	.1	3.9	139	.19
MAR									
25...	171	0	1.1	5.5	.0	.1	4.0	138	.19
APR									
28...	159	0	1.3	4.8	.3	.1	3.7	136	.19
MAY									
20...	100	0	6.4	3.8	.0	.1	4.1	88	.12
JUN									
17...	106	--	--	2.8	.1	.1	4.1	94	.13
JUL									
23...	140	0	.7	5.4	.8	.1	4.0	120	.16
AUG									
19...	141	0	1.1	5.2	.5	.1	4.0	117	.16
SEP									
23...	167	0	.8	6.7	1.0	.1	4.2	143	.19

DATE	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED AMMONIA NITROGEN (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	DISSOLVED ORGANIC CARBON (C) (MG/L)	SUSPENDED ORGANIC CARBON (C) (MG/L)
OCT									
17...	142	.00	.00	.01	.01	.00	4.3	--	--
NOV									
14...	201	.01	.01	.16	.17	.01	--	--	--
DEC									
04...	494	.07	.00	.47	.54	.11	--	--	--
JAN									
22...	102	.01	.02	.21	.22	.00		1.9	1.6
FEB									
25...	91.6	.02	.00	.00	.02	.00	--	--	--
MAR									
25...	76.0	.01	.00	.08	.09	.01	--	--	--
APR									
28...	330	.04	.01	.05	.09	.00		19	.5
MAY									
20...	1170	.05	.01	.25	.30	.06	--	--	--
JUN									
17...	642	.02	--	.10	.12	.04	--	4.2	.5
JUL									
23...	294	.02	.03	.00	.02	.00	--	--	--
AUG									
19...	284	.03	.00	.00	.03	.00	--	--	--
SEP									
23...	128	.00	.00	.00	.00	.00	--	--	--

12355000 FLATHEAD RIVER AT FLATHEAD, BRITISH COLUMBIA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	TOTAL ALUMINUM (AL) (UG/L)	DISSOLVED ALUMINUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)
OCT								
17...	1430	60	10	0	0	<10	0	--
DEC								
04...	1100	--	30	--	--	--	--	--
JAN								
22...	1015	30	0	0	0	<10	0	0
APR								
28...	1200	270	0	0	0	<10	0	0
JUN								
17...	1130	280	10	0	0	0	0	10

DATE	DISSOLVED CHROMIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DISSOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED LEAD (PB) (UG/L)
OCT									
17...	0	--	0	10	0	20	0	<100	0
DEC									
04...	--	--	--	--	--	--	--	--	--
JAN									
22...	0	<50	0	10	0	20	0	<100	2
APR									
28...	0	<50	0	<10	0	350	0	<100	2
JUN									
17...	<10	0	0	0	0	430	10	1	1

DATE	TOTAL MANGANESE (MN) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED MERCURY (HG) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT								
17...	10	10	--	.0	0	0	20	10
DEC								
04...	--	--	--	--	--	--	--	--
JAN								
22...	10	0	.0	.0	0	0	20	0
APR								
28...	10	0	.0	.0	0	0	20	0
JUN								
17...	30	0	<.5	<.5	0	0	10	10

12355000 FLATHEAD RIVER AT FLATHEAD, BRITISH COLUMBIA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	259	239	240	224	243	225	247	228	170	166	224	235
2	257	242	226	234	248	231	254	209	173	171	228	238
3	259	243	201	245	250	261	254	198	179	178	225	239
4	259	216	190	240	268	230	253	196	181	179	230	240
5	257	194	196	238	284	251	250	191	184	179	225	242
6	248	199	212	246	260	256	246	186	183	182	228	241
7	241	204	217	229	260	253	239	---	179	184	226	245
8	240	213	218	240	254	257	232	185	176	180	225	244
9	241	219	206	243	246	252	218	181	163	180	197	246
10	247	211	183	242	249	250	210	180	158	184	196	246
11	246	214	195	244	249	252	201	178	169	189	205	246
12	248	217	216	252	247	266	198	181	166	192	211	247
13	245	217	214	255	243	259	190	181	168	187	216	248
14	244	225	227	249	243	261	191	171	172	188	220	252
15	244	226	221	241	246	259	196	178	176	193	218	250
16	247	220	198	235	236	255	206	176	173	197	219	251
17	249	216	233	241	247	249	212	174	171	199	203	251
18	253	216	227	248	249	247	217	179	168	202	209	250
19	248	219	223	256	251	251	220	175	166	205	218	250
20	240	233	225	237	250	254	226	167	162	204	216	252
21	243	241	229	249	250	255	224	173	166	206	198	256
22	243	234	231	239	257	256	230	175	169	209	208	254
23	245	227	233	248	251	251	230	173	167	210	212	255
24	248	224	231	262	251	255	231	166	169	215	217	256
25	251	224	231	256	249	253	229	166	171	216	220	256
26	246	239	230	261	251	256	231	171	180	218	216	257
27	249	232	231	243	252	253	229	176	180	219	213	258
28	245	247	235	239	220	257	233	162	184	220	218	259
29	243	241	236	239	243	256	235	162	179	222	220	259
30	244	249	229	246	---	258	230	160	172	222	223	262
31	247	---	222	251	---	256	---	172	---	225	228	---
MONTH	248	225	220	244	250	252	225	179	172	197	217	250

YEAR MAX 284 MIN 158 MEAN 223

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	9.5	5.5	8.0	4.5	3.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0
2	9.5	6.0	8.0	4.5	3.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0
3	8.5	6.5	7.5	6.0	4.0	5.0	1.0	0.0	0.0	0.0	0.0	0.0
4	9.0	7.0	8.0	6.0	4.5	5.5	1.0	0.0	1.0	0.0	0.0	0.0
5	8.0	5.5	7.0	5.0	3.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
6	8.0	7.0	7.5	4.5	3.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0
7	7.0	5.5	6.0	3.5	2.5	3.0	1.0	0.0	0.0	0.0	0.0	0.0
8	6.0	4.5	5.5	3.0	2.0	2.5	1.5	0.5	1.0	0.0	0.0	0.0
9	5.5	4.0	5.0	2.0	1.0	1.5	2.5	1.5	2.0	0.0	0.0	0.0
10	6.0	4.5	5.5	1.0	0.5	1.0	2.0	0.0	1.0	0.0	0.0	0.0
11	7.0	5.5	6.0	1.5	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
12	6.0	4.5	5.0	1.5	1.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
13	6.0	3.5	5.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
14	5.5	4.0	5.0	2.5	1.5	2.0	0.0	0.0	0.0	0.0	0.0	0.0
15	7.0	4.0	6.0	3.5	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
16	5.5	3.5	4.5	2.0	0.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0
17	7.5	5.0	5.5	1.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
18	7.0	5.5	6.5	0.5	0.0	0.0	0.0	0.0	0.0	---	---	---
19	5.5	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---
20	5.0	3.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---
21	4.5	3.5	4.5	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---
22	4.5	3.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---
23	4.0	3.0	3.5	0.5	0.0	0.0	0.0	0.0	0.0	---	---	---
24	3.5	2.0	3.0	1.0	0.5	0.5	0.5	0.0	0.0	---	---	---
25	2.5	1.0	2.0	0.5	0.0	0.0	1.0	0.5	0.5	---	---	---
26	3.0	1.5	2.0	0.0	0.0	0.0	1.0	1.0	1.0	---	---	---
27	3.5	2.5	3.0	0.0	0.0	0.0	1.0	0.5	1.0	---	---	---
28	3.5	2.5	3.0	0.0	0.0	0.0	0.5	0.0	0.0	---	---	---
29	3.0	2.0	2.5	0.0	0.0	0.0	1.5	0.0	0.5	---	---	---
30	3.5	2.5	3.0	0.0	0.0	0.0	1.5	0.0	1.0	---	---	---
31	3.5	3.0	3.0	---	---	---	0.0	0.0	0.0	---	---	---
MONTH	9.5	1.0	5.0	6.0	0.0	1.5	2.5	0.0	0.5	---	---	---

12355000 FLATHEAD RIVER AT FLATHEAD BRITISH COLUMBIA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	FEBRUARY			MARCH			APRIL			MAY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	0.0	0.0	0.0	4.0	1.0	2.5	8.5	3.0	5.5
2	---	---	---	0.0	0.0	0.0	5.0	0.5	2.5	7.0	3.0	5.0
3	---	---	---	0.0	0.0	0.0	7.0	2.0	4.5	7.5	3.0	5.0
4	---	---	---	0.0	0.0	0.0	6.5	2.0	4.0	4.5	2.0	3.5
5	---	---	---	0.0	0.0	0.0	7.0	2.0	4.5	4.5	3.0	3.5
6	---	---	---	---	---	---	6.5	2.0	4.5	7.0	2.5	4.5
7	---	---	---	---	---	---	6.5	2.0	4.0	7.5	3.0	5.0
8	---	---	---	---	---	---	5.5	1.5	3.5	7.5	3.0	5.0
9	---	---	---	---	---	---	4.0	1.5	2.5	7.5	2.5	5.0
10	---	---	---	---	---	---	4.5	1.5	3.0	7.5	3.0	5.0
11	---	---	---	---	---	---	5.0	1.0	3.0	5.5	3.5	4.0
12	---	---	---	---	---	---	4.5	1.0	3.0	7.0	2.5	4.5
13	---	---	---	---	---	---	3.5	1.5	2.5	7.0	4.0	5.5
14	---	---	---	---	---	---	3.0	1.5	2.0	5.5	3.5	4.5
15	---	---	---	---	---	---	4.0	1.0	2.5	7.0	2.5	5.0
16	---	---	---	---	---	---	4.0	1.5	3.0	8.0	3.5	5.5
17	---	---	---	---	---	---	3.5	2.0	2.5	7.5	4.5	6.0
18	---	---	---	---	---	---	4.0	1.5	2.5	8.0	3.5	5.5
19	---	---	---	---	---	---	4.5	1.5	3.0	8.5	3.5	6.0
20	---	---	---	---	---	---	4.0	2.0	3.0	7.0	4.0	5.0
21	---	---	---	---	---	---	4.0	2.0	3.0	8.0	3.5	5.5
22	---	---	---	---	---	---	5.0	2.0	3.5	8.5	4.0	6.5
23	---	---	---	---	---	---	7.0	3.0	5.0	6.5	5.5	6.5
24	---	---	---	---	---	---	5.5	3.5	4.5	8.0	5.5	6.5
25	0.5	0.0	0.5	---	---	---	4.0	3.0	3.5	6.0	4.5	5.5
26	0.5	0.0	0.0	2.0	0.5	1.0	3.0	1.5	2.0	7.0	4.0	5.0
27	0.0	0.0	0.0	1.5	0.0	1.0	4.5	1.5	3.0	10.0	4.0	7.0
28	0.0	0.0	0.0	3.5	0.0	2.0	4.5	2.5	3.5	8.0	5.5	7.0
29	0.0	0.0	0.0	4.5	0.5	2.5	7.5	1.5	4.5	7.0	4.0	5.5
30	---	---	---	5.5	2.0	3.5	8.5	2.5	5.5	7.5	4.0	6.0
31	---	---	---	5.0	1.5	3.5	---	---	---	7.5	5.0	6.0
MONTH	---	---	---	---	---	---	8.5	0.5	3.5	10.0	2.0	5.5

	JUNE			JULY			AUGUST			SEPTEMBER		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	7.5	4.5	6.0	11.5	8.0	9.5	15.5	11.5	13.5	14.5	9.5	12.5
2	8.0	4.5	6.0	12.0	6.0	9.0	15.0	12.0	13.5	14.0	10.5	12.5
3	6.0	4.5	5.0	12.0	6.5	9.5	16.0	10.5	13.5	13.0	9.5	11.5
4	8.5	4.5	6.5	11.0	6.5	10.0	14.0	11.0	12.5	14.5	9.5	12.0
5	9.5	4.5	7.0	12.5	8.0	10.0	13.5	11.0	12.0	14.0	9.5	12.0
6	7.5	5.5	6.5	13.0	8.0	10.5	16.0	9.5	12.5	13.0	10.0	11.5
7	9.5	5.0	7.0	11.5	6.5	10.0	16.0	11.5	14.0	10.5	8.0	9.0
8	10.5	5.5	8.0	11.0	8.0	9.5	13.5	10.0	11.0	10.0	7.5	8.5
9	9.5	6.5	8.0	11.5	8.0	9.5	10.5	9.5	10.0	11.0	6.5	9.0
10	7.5	5.5	6.0	13.0	7.5	10.0	13.0	9.5	11.0	11.5	7.0	9.5
11	8.5	5.0	6.5	14.0	8.5	11.0	14.0	10.0	12.0	10.5	7.5	9.0
12	8.0	6.0	7.0	12.0	9.0	9.5	14.5	10.0	12.0	10.0	6.5	9.5
13	6.5	4.0	4.5	12.5	8.0	10.0	13.5	10.5	12.0	11.5	7.0	9.0
14	8.5	4.0	6.0	13.0	8.0	10.5	13.0	10.0	11.5	11.5	7.0	9.5
15	7.5	6.0	7.0	14.5	8.0	11.5	13.5	10.0	12.0	12.0	7.5	10.0
16	8.5	6.0	7.0	15.0	9.0	12.0	12.0	10.0	11.0	12.5	7.5	10.5
17	10.5	5.5	8.0	15.0	9.5	12.5	12.0	8.0	10.0	11.0	9.5	10.5
18	11.5	5.5	8.5	15.0	10.0	12.5	11.5	8.0	10.0	12.0	9.5	10.5
19	10.0	6.5	8.5	14.0	10.0	12.0	10.5	8.0	9.5	11.5	7.0	9.5
20	9.5	6.5	8.0	13.5	9.5	11.5	12.5	8.5	10.5	11.0	7.0	9.5
21	8.0	6.0	7.0	13.5	9.0	11.5	13.5	8.0	11.0	11.5	7.0	9.5
22	8.0	6.0	7.0	15.0	9.0	12.0	15.0	9.0	12.0	12.0	7.5	10.0
23	8.5	6.0	7.0	15.5	9.5	12.5	14.0	11.5	13.0	12.0	8.0	10.0
24	8.5	6.0	7.5	14.0	10.5	11.5	14.5	11.0	12.5	12.0	9.0	10.5
25	7.0	5.5	6.5	15.0	10.0	12.5	13.5	10.0	11.5	11.0	9.0	10.0
26	8.5	5.0	7.0	16.0	10.5	13.5	11.5	8.5	9.5	11.0	7.0	9.0
27	12.0	6.0	8.5	15.0	10.5	13.0	9.5	7.5	8.5	11.0	7.0	9.0
28	12.5	6.5	9.5	15.0	9.0	12.5	11.5	8.0	9.5	11.0	7.0	9.0
29	13.5	7.5	10.5	13.0	10.0	11.0	13.5	8.0	11.0	11.0	7.0	9.0
30	14.0	8.5	11.5	11.0	9.5	10.0	14.0	9.0	12.0	11.5	8.0	9.5
31	---	---	---	15.5	9.0	12.0	14.5	9.5	12.0	---	---	---
MONTH	14.0	4.0	7.5	16.0	6.0	11.0	16.0	7.5	11.5	14.5	6.5	10.0
YEAR	16.0	0.0	5.5									

12355000 FLATHEAD RIVER AT FLATHEAD, BRITISH COLUMBIA--Continued

TURBIDITY (JTU), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	1	1	2	1	1	2	30	15	3	3	1
2	0	2	2	1	1	1	0	40	20	3	3	1
3	0	15	20	1	1	0	1	70	15	2	4	1
4	0	20	50	1	1	1	2	100	20	2	4	0
5	0	20	20	1	1	1	3	50	20	1	3	0
6	1	8	20	1	1	1	2	40	20	2	2	0
7	1	7	10	2	0	0	3	---	10	2	2	1
8	1	3	20	1	0	1	7	100	10	2	2	1
9	1	2	20	1	0	0	30	150	30	2	100	1
10	1	2	20	1	0	1	30	150	30	1	35	0
11	0	3	6	1	0	1	30	150	20	1	20	0
12	0	1	4	0	0	1	40	100	10	1	6	1
13	0	1	3	0	1	1	45	100	10	2	4	0
14	0	0	3	1	1	0	25	100	20	2	4	1
15	0	1	2	3	0	0	20	70	10	1	4	0
16	0	1	2	4	1	0	15	70	15	1	3	1
17	0	1	1	3	1	1	10	70	10	4	2	0
18	0	1	2	3	0	1	5	35	4	4	2	1
19	1	1	1	1	0	1	4	25	3	2	1	1
20	2	1	2	1	0	1	4	40	5	2	2	1
21	1	1	2	1	0	1	4	30	3	2	2	1
22	2	1	2	1	0	1	2	40	4	1	1	1
23	0	1	10	1	0	1	3	30	5	2	1	1
24	0	0	20	1	1	1	4	50	4	1	1	---
25	0	0	2	0	1	1	3	40	3	2	1	---
26	0	1	1	0	0	1	2	20	2	1	1	---
27	1	0	2	1	0	1	3	15	3	1	1	---
28	0	1	2	0	1	1	4	35	2	1	1	---
29	0	0	1	1	0	1	3	20	4	1	1	---
30	0	1	2	1	---	1	6	25	4	1	1	---
31	0	---	2	1	---	2	---	20	---	2	1	---
MONTH	0	3	8	1	0	0	10	60	10	1	7	---
YEAR	MAX	150	MIN	0	MEAN	8						

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	276	3	2.2	390	8	8.4	512	2	2.8
2	274	2	1.5	397	11	12	738	55	110
3	273	2	1.5	589	48	76	1180	343	1090
4	365	3	3.0	1010	74	202	1780	230	1110
5	414	4	4.5	1280	67	232	1610	27	117
6	418	4	4.5	1200	30	97	1220	6	20
7	482	5	6.5	1080	21	61	1060	12	34
8	460	5	6.2	921	14	35	938	12	30
9	427	5	5.8	823	18	40	1350	63	230
10	404	4	4.4	731	9	18	1840	94	467
11	405	4	4.4	675	14	26	1520	26	107
12	399	3	3.2	630	8	14	1270	3	10
13	390	3	3.2	586	3	4.7	941	4	10
14	384	5	5.2	567	8	12	850	1	2.3
15	377	4	4.1	622	6	10	869	1	2.3
16	369	3	3.0	675	9	16	700	2	3.8
17	360	3	2.9	614	5	8.3	702	2	3.8
18	365	7	6.9	535	3	4.3	779	1	2.1
19	402	4	4.3	449	5	6.1	811	1	2.2
20	463	5	6.3	418	2	2.3	776	1	2.1
21	444	3	3.6	425	4	4.6	703	1	1.9
22	419	5	5.7	511	4	5.5	650	1	1.8
23	398	4	4.3	510	1	1.4	619	14	23
24	379	5	5.1	464	7	8.8	599	66	107
25	376	1	1.0	430	1	1.2	525	2	2.8
26	371	10	10	434	2	2.3	514	3	4.2
27	360	9	8.7	404	3	3.3	506	7	9.6
28	349	8	7.5	348	1	.94	475	4	5.1
29	357	3	2.9	348	2	1.9	462	1	1.2
30	379	5	5.1	376	3	3.0	425	5	5.7
31	410	4	4.4	---	---	---	395	1	1.1
TOTAL	11949	---	141.9	18442	---	918.04	27319	---	3519.8

12355000 FLATHEAD RIVER AT FLATHEAD, BRITISH COLUMBIA--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	334	1	.90	242	2	1.3	174	6	2.8
2	319	2	1.7	242	9	5.9	145	5	2.0
3	330	2	1.8	239	2	1.3	131	6	2.1
4	350	2	1.9	195	1	.53	174	3	1.4
5	370	1	1.0	150	2	.81	232	7	4.4
6	354	1	.96	189	1	.51	273	4	2.9
7	324	2	1.7	258	2	1.4	273	5	3.7
8	311	2	1.7	288	3	2.3	257	2	1.4
9	316	1	.85	315	1	.85	242	2	1.3
10	312	1	.84	302	5	4.1	226	5	3.1
11	315	1	.85	286	13	10	209	3	1.7
12	304	2	1.6	294	1	.79	180	1	.49
13	296	4	3.2	302	2	1.6	192	6	3.1
14	283	1	.76	299	2	1.6	192	4	2.1
15	283	3	2.3	283	2	1.5	186	1	.50
16	300	21	17	268	2	1.4	194	1	.52
17	303	16	13	257	5	3.5	205	2	1.1
18	305	15	12	257	2	1.4	223	6	3.6
19	290	3	2.3	253	1	.68	219	5	3.0
20	276	10	7.5	253	8	5.5	217	5	2.9
21	269	7	5.1	246	5	3.3	209	3	1.7
22	267	2	1.4	234	4	2.5	203	6	3.3
23	281	2	1.5	244	4	2.6	207	3	1.7
24	274	4	3.0	245	6	4.0	207	4	2.2
25	273	2	1.5	242	8	5.2	206	1	.56
26	268	1	.72	231	6	3.7	202	3	1.6
27	278	2	1.5	226	3	1.8	200	2	1.1
28	273	5	3.7	191	6	3.1	198	1	.53
29	263	1	.71	211	4	2.3	193	4	2.1
30	268	5	3.6	---	---	---	190	5	2.6
31	256	6	4.1	---	---	---	195	6	3.2
TOTAL	9245	---	100.69	7242	---	75.47	6354	---	64.70
		APRIL			MAY			JUNE	
1	206	5	2.8	1680	83	376	2920	36	284
2	202	1	.55	2450	192	1270	2630	41	291
3	201	2	1.1	3340	374	3370	2400	39	253
4	208	5	2.8	4160	519	5830	2250	19	115
5	237	8	5.1	4070	182	2000	2160	28	163
6	286	24	19	4180	179	2020	2230	33	199
7	396	27	29	4660	449	5650	2230	30	181
8	579	48	75	5490	630	9340	2510	54	366
9	955	120	309	6450	757	13200	3310	112	1000
10	1370	139	514	6820	792	14600	3730	110	1110
11	1740	146	686	8220	800	17800	3140	44	373
12	2120	177	1010	5980	390	6300	3010	35	284
13	2390	183	1180	5290	241	3440	2800	44	333
14	2190	87	514	6420	415	7190	2440	48	316
15	1800	60	292	5230	280	3950	2260	31	189
16	1490	32	129	4380	164	1940	2320	41	257
17	1280	28	97	4560	119	1470	2500	35	236
18	1140	22	68	4200	96	1090	2590	35	245
19	1060	23	66	3960	82	877	2800	32	242
20	1010	25	68	4550	143	1760	2940	52	413
21	952	26	67	4110	76	843	2840	27	207
22	864	20	47	3680	56	556	2670	36	260
23	837	14	32	3920	85	900	2490	28	188
24	882	18	43	4730	155	1980	2510	28	190
25	979	22	58	4770	93	1200	2330	40	252
26	949	21	54	3800	49	503	2150	20	116
27	930	22	55	3320	47	421	1900	22	113
28	882	13	31	4430	133	1590	1830	24	119
29	909	10	25	4220	76	866	1910	35	180
30	1140	46	142	3410	40	368	2270	38	233
31	---	---	---	3200	36	311	---	---	---
TOTAL	30184	---	5622.35	139680	---	113011	76070	---	8708

12355000 FLATHEAD RIVER AT FLATHEAD, BRITISH COLUMBIA--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	2410	38	247	643	4	6.9	626	7	12
2	2050	20	111	627	5	8.5	589	1	1.6
3	1840	16	79	643	9	16	571	3	4.6
4	1780	17	82	618	4	6.7	562	2	3.0
5	1750	12	57	656	1	1.8	535	3	4.3
6	1680	18	82	763	1	2.1	528	2	2.9
7	1670	21	95	721	8	16	526	6	8.5
8	1710	13	60	861	23	53	515	4	5.6
9	1650	11	49	1890	189	964	498	5	6.7
10	1510	29	118	1600	66	285	478	5	6.5
11	1380	9	34	1370	33	122	466	10	13
12	1380	13	48	1190	14	45	467	3	3.8
13	1520	20	82	1070	11	32	456	1	1.2
14	1370	10	37	1000	9	24	436	4	4.7
15	1250	10	34	986	8	21	417	1	1.1
16	1160	9	28	975	5	13	406	2	2.2
17	1110	10	30	1110	16	48	399	4	4.3
18	1080	6	17	947	8	20	392	4	4.2
19	1050	6	17	860	9	21	378	17	17
20	1000	10	27	1030	2	5.6	363	1	.98
21	953	7	18	1100	8	24	350	9	8.5
22	898	5	12	990	3	8.0	340	6	5.5
23	824	3	6.7	953	7	18	332	5	4.5
24	786	6	13	910	2	4.9	324	9	7.9
25	760	5	10	864	2	4.7	326	9	7.9
26	738	1	2.0	933	4	10	331	5	4.5
27	709	3	5.7	880	3	7.1	328	2	1.8
28	679	3	5.5	789	2	4.3	294	4	3.2
29	651	3	5.3	737	2	4.0	282	4	3.0
30	659	3	5.3	686	4	7.4	274	6	4.4
31	662	2	3.6	649	1	1.8	---	---	---
TOTAL	38669	---	1421.1	29051	---	1805.8	12789	---	159.38
YEAR	406994		135548.2						

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON

Date	Length of exposure (days)	Biomass (g/m^2) Dry weight	Biomass (g/m^2) Ash weight	Chlorophyll a (mg/m^2)	Chlorophyll b (mg/m^2)	Biomass pigment ratio	Sampling method
Oct 17	29	.800	.200	.900	.000	660	Polyethylene strip
Apr 28	34	6.00	5.69	2.74	.202	110	
May 20	22	7.08	6.31	8.01	.000	96	
Jun 17	28	6.69	5.54	2.28	.000	500	
Jul 23	36	4.77	3.08	1.43	.197	1200	
Aug 19	27	4.54	3.15	2.34	.264	590	
Sep 23	35	1.38	.923	1.54	.042	300	

12355000 FLATHEAD RIVER AT FLATHEAD, BRITISH COLUMBIA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
OCT. 17, 1975
1430 HOURS
64 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
D	....COCCONEIS		13	20	
	...CYMBELLACEAE				
L	....CYMBELLA			0	
	...FRAGILARIACEAE				
D	....HANNAEA		13	20	
D	....SYNEDRA		13	20	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		13	20	
	...NAVICULACEAE	NAVICULOID			
L	....NAVICULA			0	
	...NITZSCHIACEAE				
D	....NITZSCHIA		13	20	
		TOTALS	64	100	2.322=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
L	....OSCILLATORIA			0	

NOTE: D - DOMINANT ORGANISM; GREATER OR EQUAL TO 15%
L - LESS THEN 1%; MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
FAMILY 1.922
GENERA 2.322

NOV. 14, 1975
1100 HOURS
250 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		27	11	
	....COCCONEIS		16	7	
	...CYMBELLACEAE				
L	....CYMBELLA			0	
	...DIATOMACEAE				
L	....DIATOMA			0	
	...FRAGILARIACEAE				
	....HANNAEA				
D	.....H.ARCUS		77	30	
	....SYNEDRA		11	4	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		60	24	
	...MERIDIONACEAE				
	....MERIDION		11	4	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		22	9	
	...NITZSCHIACEAE				
	....NITZSCHIA		27	11	
		TOTALS	250	100	2.669=DIVERSITY

FAMILY 2.313
GENERA 2.669

12355000 FLATHEAD RIVER AT FLATHEAD, BRITISH COLUMBIA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

DEC. 4, 1975
1100 HOURS
1,100 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
L	....COCCONEIS			0	
	...CYMBELLACEAE				
L	....CYMBELLA			0	
L	....EPITHEMIA			0	
	...DIATOMACEAE				
L	....DIATOMA			0	
	...FRAGILARIACEAE				
D	....HANNAEA		200	19	
D	....SYNEDRA		200	19	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		330	31	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		270	25	
	...NITZSCHIACEAE				
	....NITZSCHIA		67	6	
		TOTALS	1,100	100	2.180=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...NOSTOCACEAE				
L	....ANABAENA			0	
	...OSCILLATORIACEAE				
L	....LYNGBYA			0	

FAMILY 1.805
GENERA 2.180

JAN. 22, 1976
1015 HOURS
96 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		4	4	
	....COCCONEIS		8	8	
	...FRAGILARIACEAE				
D	....HANNAEA		20	21	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		48	50	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		16	17	
		TOTALS	96	100	1.892=DIVERSITY

FAMILY 1.777
GENERA 1.892

FEB. 25, 1976
1100 HOURS
180 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		11	6	
	....COCCONEIS		11	6	
	...CYMBELLACEAE				
	....CYMBELLA		11	6	
	...FRAGILARIACEAE				
	....HANNAEA		11	6	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		85	47	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		11	6	
	...NITZSCHIACEAE				
O	....NITZSCHIA		42	24	
		TOTALS	180	101	2.205=DIVERSITY

FAMILY 2.087
GENERA 2.205

12355000 FLATHEAD RIVER AT FLATHEAD, BRITISH COLUMBIA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAR. 25, 1976
1130 HOURS
75 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		5	6	
D	....COCCONEIS		19	25	
	...CYMBELLACEAE				
D	....CYMBELLA		14	19	
	...FRAGILARIACEAE				
	....FRAGILARIA		5	6	
L	....HANNAEA			0	
	...GOMPHONEMATACEAE				
O	....GOMPHONEMA		33	44	
		TOTALS	75	100	1.975=DIVERSITY

FAMILY 1.749
GENERA 1.975

APR. 28, 1976
1200 HOURS
150 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		12	8	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		12	8	
O	....COCCONEIS		23	15	
	...CYMBELLACEAE				
	....CYMBELLA		18	12	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		58	38	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		6	4	
		TOTALS	130	85	2.188=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
D	....OSCILLATORIA		23	15	
		TOTALS	23	15	0.000=DIVERSITY

PHYL/DIV 0.619
CLASS 0.619
ORDER 0.991
FAMILY 2.259
GENERA 2.471

MAY 20, 1976
1130 HOURS
52 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...CYMBELLACEAE				
O	....CYMBELLA		10	20	
	...FRAGILARIACEAE				
	....HANNAEA		5	10	
	...GOMPHONEMATACEAE				
O	....GOMPHONEMA		10	20	
	...MERIDIONACEAE				
	....MERIDION		5	10	
	...NAVICULACEAE	NAVICULOID			
O	....NAVICULA		16	30	
	...NITZSCHIACEAE				
	....NITZSCHIA		5	10	
		TOTALS	52	100	2.446=DIVERSITY

FAMILY 2.446
GENERA 2.446

12355000 FLATHEAD RIVER AT FLATHEAD, BRITISH COLUMBIA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

JUNE 17, 1976
1130 HOURS
81 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....TETRAEDRON		4	5	
		TOTALS	4	5	0.000=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....MELOSIRA		4	5	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		12	14	
	....COCCONEIS		4	5	
	...CYMBELLACEAE				
	....CYMBELLA		12	14	
	...FRAGILARIACEAE				
O	....HANNAEA		19	24	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		4	5	
	...MERIDIONACEAE				
L	....MERIDION			0	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		4	5	
	...NITZSCHIACEAE				
D	....NITZSCHIA		19	24	
		TOTALS	77	96	2.685=DIVERSITY

PHYL/DIV	0.276
CLASS	0.276
ORDER	0.549
FAMILY	2.679
GENERA	2.834

JULY 23, 1976
1100 HOURS
150 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		9	6	
	....COCCONEIS		14	9	
	...FRAGILARIACEAE				
O	....HANNAEA		27	19	
	....SYNEDRA		5	3	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		32	22	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		14	9	
	...NITZSCHIACEAE				
O	....NITZSCHIA		41	28	
		TOTALS	140	96	2.528=DIVERSITY
	EUGLENOPHYTA	EUGLENOIDS			
	.EUGLENOPHYCEAE				
	..EUGLENALES				
	...EUGLENACEAE				
	....TRACHELOMONAS		5	3	
		TOTALS	5	3	0.000=DIVERSITY

PHYL/DIV	0.201
CLASS	0.201
ORDER	0.201
FAMILY	2.369
GENERA	2.650

12355000 FLATHEAD RIVER AT FLATHEAD, BRITISH COLUMBIA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON

AUG. 19, 1976
0915 HOURS
420 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
O	....OICTYOSPHAERIUM		250	61	
		TOTALS	250	61	0.000=OIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	OIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINOOISCACEAE				
	....CYCLOTELLA		7	2	
O	....MELOSIRA		89	21	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		27	7	
	...CYMBELLACEAE				
	....AMPHORA		7	2	
	...FRAGILARIACEAE				
	....HANNAEA		20	5	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		7	2	
	...NITZSCHIACEAE				
	....NITZSCHIA		7	2	
		TOTALS	160	41	2.049=OIVERSITY

PHYL/OIV 0.967
CLASS 0.967
OROER 1.353
FAMILY 1.688
GENERA 1.773

SEP. 23, 1976
1130 HOURS
110 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	OIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
O	....COCCONEIS		19	17	
	...CYMBELLACEAE				
	....AMPHORA		3	2	
	....CYMBELLA		3	2	
	...FRAGILARIACEAE				
	....SYNEORA		3	2	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		5	5	
	...NAVICULACEAE	NAVICULOIO			
	....NAVICULA		3	2	
	...NITZSCHIACEAE				
O	....NITZSCHIA		19	17	
		TOTALS	55	47	2.257=OIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...NOSTOCACEAE				
O	....ANABAENA		55	50	
		TOTALS	55	50	0.000=OIVERSITY

PHYL/OIV 1.000
CLASS 1.000
OROER 1.000
FAMILY 2.078
GENERA 2.128

12355500 NORTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT

LOCATION.--Lat 48°29'44", long 114°07'36", in NE¼SW¼NW¼ sec.35, T.32 N., R.20 W., Flathead County, Hydrologic Unit 17010202, on right bank 1.5 mi (2.4 km) downstream from Canyon Creek, 3.8 mi (6.1 km) upstream from Middle Fork, 8.8 mi (14.2 km) northeast of Columbia Falls, and at mile 162.1 (260.8 km).

DRAINAGE AREA.--1,548 mi^2 (4,009 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1910 to September 1917 (no winter records in water years 1913, 1916, 1917), April 1929 to February 1935 (incomplete), June 1935 to current year. Monthly discharge only for some periods, published in WSP 1316. Published as Flathead River near Columbia Falls 1915-17, 1929-70.

REVISED RECORDS.--WSP 1216: Drainage area. WSP 1246: 1911, 1912(M), 1915-17(M), 1929(M), 1938-39(M), 1946(M).

GAGE.--Water-stage recorder. Datum of gage is 3,145.59 ft (958.776 m) above mean sea level. September 1910 to September 1917 and April to August 1929, nonrecording gages, and May 1, 1930, to Sept. 30, 1962, water-stage recorder, all at site 2.7 mi (4.3 km) downstream at different datums.

REMARKS.--Water-discharge records good. A few small diversions from tributaries for irrigation of hay meadows above station.

AVERAGE DISCHARGE.--45 years (1910-12, 1913-15, 1935-76), 3,036 ft^3/s (85.98 m^3/s), 26.63 in/yr (676 mm/yr), 2,200,000 acre-ft/yr (2.71 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 69,100 ft^3/s (1,960 m^3/s) June 9, 1964, gage height, 18.60 ft (5.669 m), from floodmark, from rating curve extended above 37,000 ft^3/s (1,050 m^3/s) on basis of slope-area measurement of peak flow; minimum, 198 ft^3/s (5.61 m^3/s) Jan. 8, 1953, gage height, 0.86 ft (0.262 m), site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 24,200 ft^3/s (685 m^3/s) May 11, gage height, 10.56 ft (3.219 m); minimum, 420 ft^3/s (11.9 m^3/s) Mar. 2, gage height, 1.46 ft (0.445 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	977	1380	1010	1150	932	600	764	4280	9540	8790	2870	2090
2	959	1380	1680	1100	932	500	780	5780	8730	8230	2790	2010
3	950	1690	2650	1180	887	450	788	7880	8180	7350	2790	1910
4	1080	2130	4380	1250	724	600	836	9990	7650	6990	2750	1850
5	1160	2660	4800	1320	550	800	959	10700	6940	6990	2870	1780
6	1170	2870	3540	1310	700	941	1190	11000	6770	6890	2880	1750
7	1440	2800	3080	1200	923	941	1600	11300	6890	6870	2980	1780
8	1530	2600	2830	1150	1030	887	2230	12900	7180	7200	2880	1760
9	1440	2380	2800	1170	1110	836	3100	15600	8670	7400	4370	1690
10	1380	2210	3430	1200	1070	780	4140	18100	10500	6820	5320	1620
11	1380	2040	3500	1210	1020	748	5340	22600	10300	6230	4880	1560
12	1400	1930	3130	1170	1050	644	6380	21200	9360	6160	4310	1540
13	1380	1830	2570	1140	1040	686	7700	16800	8880	6870	3860	1500
14	1350	1750	2200	1090	1030	686	7500	17600	8180	6390	3550	1450
15	1330	1770	2260	1130	977	665	6480	16900	7350	5770	3480	1400
16	1320	1890	2070	1200	923	693	5480	14100	7330	5320	3490	1350
17	1300	1830	1870	1210	887	732	4820	13500	7730	5040	3780	1310
18	1260	1660	1990	1220	887	780	4260	13100	7980	4900	3640	1300
19	1270	1410	2080	1210	844	796	3900	12200	8400	4770	3320	1280
20	1370	1320	1990	1150	844	788	3640	12600	9120	4610	3190	1250
21	1410	1400	1850	1120	820	756	3460	12700	9300	4470	3250	1220
22	1410	1490	1710	1120	780	732	3230	11200	8670	4180	3080	1180
23	1390	1480	1630	1170	812	732	3050	11100	8640	3900	2960	1160
24	1350	1450	1620	1140	820	732	3020	12600	8430	3710	2910	1150
25	1320	1400	1600	1090	812	740	3290	13700	8000	3690	2770	1160
26	1330	1330	1550	1070	804	724	3250	12400	7400	3530	2790	1140
27	1290	1280	1550	1110	796	716	3220	10500	6650	3370	2790	1130
28	1260	1120	1450	1090	740	708	3170	11800	6230	3250	2640	1110
29	1240	1010	1410	1050	679	700	3140	13200	6440	3100	2480	1090
30	1240	977	1390	1030	---	693	3350	11400	7450	3080	2330	1060
31	1380	---	1360	986	---	708	---	10200	---	3030	2190	---
TOTAL	40066	52467	70980	35736	25423	22494	104067	398930	242890	168900	100190	43580
MEAN	1292	1749	2290	1153	877	726	3469	12870	8096	5448	3232	1453
MAX	1530	2870	4800	1320	1110	941	7700	22600	10500	8790	5320	2090
MIN	950	977	1010	986	550	450	764	4280	6230	3030	2190	1060
CFSM	.83	1.13	1.48	.74	.57	.47	2.24	8.31	5.23	3.52	2.09	.94
IN.	.96	1.26	1.71	.86	.61	.54	2.50	9.59	5.84	4.06	2.41	1.05
AC-FT	79470	104100	140800	70880	50430	44620	206400	791300	481800	335000	198700	86440

CAL YR 1975 TOTAL 1210006 MEAN 3315 MAX 24900 MIN 350 CFSM 2.14 IN 29.08 AC-FT 2400000
WTR YR 1976 TOTAL 1305723 MEAN 3568 MAX 22600 MIN 450 CFSM 2.30 IN 31.38 AC-FT 2590000

12355500 NORTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1970 and current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1975 to September 1976.
WATER TEMPERATURES: October 1975 to September 1976.
SUSPENDED SEDIMENT DISCHARGE: October 1975 to September 1976.

INSTRUMENTATION.--Temperature recorder since Oct. 1, 1975.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 219 micromhos Mar. 2; minimum, 128 micromhos May 28, June 30, July 1.
TURBIDITY: Maximum, 170 JTU May 11; minimum, 0 JTU on many days during October to March and September.
WATER TEMPERATURES: Maximum, 17.5°C Aug. 2; minimum, 0.0°C on many days during November to March.
SEDIMENT CONCENTRATIONS: Maximum daily, 931 mg/L May 11; minimum daily, 1 mg/L on several days during the year.
SEDIMENT LOADS: Maximum daily, 56,800 tons (51,600 tonnes) May 11; minimum daily, 2.0 tons (1.8 tonnes) Mar. 22, 24.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	FECAL COLIFORM (COL. PER 100 ML)
OCT										
10...	1100	1350	165	8.2	9.0	6.5	1	10.9	100	<1
NOV										
07...	1030	2800	150	8.0	5.0	4.0	2	11.5	102	<1
DEC										
10...	1330	3800	155	7.7	7.0	3.0	10	11.5	99	8
JAN										
26...	1300	1000	190	8.1	-5.0	.0	1	13.0	102	<1
FEB										
24...	1300	800	175	7.8	1.0	1.0	0	12.4	101	<1
MAR										
26...	1100	738	218	8.1	4.0	2.0	1	12.4	103	4
APR										
27...	1300	3250	150	8.2	11.0	3.5	5	11.8	103	<1
MAY										
28...	1330	11700	128	8.2	7.0	7.5	20	10.4	101	16
JUN										
18...	1130	8100	115	8.2	15.0	8.5	5	10.4	102	3
JUL										
23...	1700	4020	130	8.5	29.0	15.0	1	9.4	108	<1
AUG										
19...	1500	3170	153	8.3	18.5	11.5	1	9.6	102	2
SEP										
24...	1030	1350	175	8.4	12.0	11.0	1	10.0	100	<1

DATE	FECAL STREPTOCOCCI KF AGAR (COL. PER 100 ML)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	TOTAL ACIDITY AS H+ (MG/L)	TOTAL ACIDITY AS CACO3 (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)
OCT										
10...	4	100	7	.0	.0	30	7.1	1.0	.0	.4
NOV										
07...	4	88	2	.1	5.0	25	6.1	.9	.0	.3
DEC										
10...	32	88	4	.1	5.0	26	5.7	.9	.0	.3
JAN										
26...	<1	110	4	.0	.0	31	7.6	1.2	.1	.3
FEB										
24...	<1	120	10	.0	.0	33	8.0	1.7	.1	.5
MAR										
26...	4	110	1	.1	5.0	31	7.7	1.3	.1	.3
APR										
27...	2	95	3	.1	5.0	26	7.2	.9	.0	.4
MAY										
28...	12	69	0	.1	5.0	20	4.6	.5	.0	.2
JUN										
18...	3	73	4	.1	5.0	21	4.9	.7	.0	.3
JUL										
23...	10	79	1	.0	.0	23	5.3	.6	.0	.3
AUG										
19...	17	89	9	.0	.0	27	5.2	.7	.0	.3
SEP										
24...	13	110	4	.0	.0	30	7.6	.8	.0	.3

12355500 NORTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)
OCT									
10...	118	0	1.2	7.6	.2	.1	4.5	108	.15
NOV									
07...	104	0	1.7	4.4	.6	.1	4.4	95	.13
DEC									
10...	103	0	3.3	5.9	.1	.1	4.8	98	.13
JAN									
26...	128	0	1.6	10	.7	.1	4.6	116	.16
FEB									
24...	128	0	3.2	9.4	.9	.1	4.4	125	.17
MAR									
26...	132	0	1.7	11	.0	.1	4.8	128	.17
APR									
27...	112	0	1.1	5.4	.3	.1	5.2	101	.14
MAY									
28...	84	0	.8	4.1	1.1	.1	4.7	83	.11
JUN									
18...	84	0	.8	6.6	1.6	.1	4.5	79	.11
JUL									
23...	95	0	.5	7.2	1.5	.1	3.9	85	.12
AUG									
19...	97	0	.8	6.6	.6	.1	4.0	87	.12
SEP									
24...	125	0	.8	9.5	.2	.1	4.4	105	.14

DATE	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED AMMONIA NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	DIS-SOL-VED ORGANIC CARBON (C) (MG/L)	SUS-PENDED ORGANIC CARBON (C) (MG/L)
OCT									
10...	394	.01	--	.12	.13	.01	3.9	--	--
NOV									
07...	718	.02	.00	.05	.07	.01	--	--	--
DEC									
10...	1010	.09	.03	.20	.29	.02	--	--	--
JAN									
26...	313	.06	.01	.11	.17	.00	--	5.8	.7
FEB									
24...	270	.07	.02	.22	.29	.00	--	--	--
MAR									
26...	255	.07	.01	.09	.16	.00	--	--	--
APR									
27...	886	.04	--	.04	.08	.03	--	4.8	.4
MAY									
28...	2620	.05	.01	.15	.20	.05	--	--	--
JUN									
18...	1730	.05	--	.08	.13	.04	--	4.6	.5
JUL									
23...	923	.04	.01	.00	.04	.00	--	--	--
AUG									
19...	745	.29	.00	.00	.29	.00	--	--	--
SEP									
24...	383	.11	.00	.00	.11	.00	--	--	--

DATE	TIME	TOTAL ALUM-INUM (AL) (UG/L)	DIS-SOLVED ALUM-INUM (AL) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)
OCT								
10...	1100	60	20	1	1	0	0	10
NOV								
07...	1030	--	20	--	--	--	--	--
JAN								
26...	1300	30	20	0	0	<10	0	0
APR								
27...	1300	220	10	1	1	<10	0	10
JUN								
18...	1130	230	10	0	0	1	0	10

12355500 NORTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)
OCT									
10...	10	<50	1	0	1	0	10	0	0
NOV									
07...	--	--	--	--	--	--	--	--	--
JAN									
26...	0	<50	0	10	0	0	10	<100	0
APR									
27...	0	<50	0	10	1	210	60	<100	0
JUN									
18...	<10	1	0	0	0	280	20	3	1

DATE	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT								
10...	10	10	--	.0	0	0	10	10
NOV								
07...	--	--	--	--	--	--	--	--
JAN								
26...	0	0	.0	.0	0	0	10	0
APR								
27...	10	0	.0	.0	0	0	0	0
JUN								
18...	10	1	<.5	<.5	0	0	20	1

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	202	192	190	210	197	---	208	169	142	128	163	175
2	203	190	174	179	198	219	---	---	143	---	165	175
3	202	177	160	177	198	218	210	160	140	133	160	---
4	194	175	142	191	200	217	207	161	---	132	160	177
5	198	171	157	193	214	---	200	151	152	131	159	178
6	200	170	168	---	---	210	---	152	151	131	---	177
7	183	170	170	175	201	204	178	---	149	130	161	178
8	185	171	170	197	205	203	167	153	145	---	162	177
9	185	172	172	193	199	204	161	151	137	130	156	178
10	191	173	169	196	199	---	159	148	133	---	145	---
11	191	176	173	195	198	202	155	148	---	135	147	181
12	193	180	175	---	196	211	153	148	136	131	149	181
13	192	182	186	197	---	205	150	147	144	133	155	---
14	189	184	191	194	192	209	150	142	140	137	---	184
15	188	186	---	191	193	209	155	142	142	129	155	186
16	189	180	187	187	192	208	---	145	139	---	151	187
17	192	182	142	189	193	205	159	145	---	---	---	---
18	197	---	---	169	---	201	---	141	---	141	---	187
19	196	197	185	190	198	---	169	142	130	142	---	189
20	---	---	185	194	198	204	---	138	136	146	157	191
21	190	197	188	199	199	207	171	---	137	144	162	192
22	190	192	192	200	202	207	---	142	131	147	162	192
23	190	187	175	193	201	209	178	140	129	---	162	193
24	195	187	191	176	204	204	177	136	131	150	163	---
25	195	189	191	197	202	207	172	134	---	150	---	191
26	194	189	189	---	201	---	174	138	134	154	---	192
27	195	196	189	190	---	209	174	145	---	151	166	---
28	189	---	194	192	204	---	176	---	139	153	169	194
29	192	177	196	195	203	209	176	132	138	155	168	194
30	191	201	193	---	---	209	---	141	128	---	172	195
31	187	---	---	197	---	---	---	136	---	158	174	---
MONTH	193	183	178	191	199	---	---	145	139	---	---	185

YEAR MAX 219 MIN 128 MEAN 175

12355500 NORTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	10.0	7.5	9.0	4.5	3.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0
2	9.5	8.0	8.5	5.5	4.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0
3	10.0	8.5	9.0	6.5	5.5	5.5	1.0	0.0	0.5	0.0	0.0	0.0
4	9.5	7.5	8.5	6.5	5.5	6.0	1.5	0.5	1.5	0.0	0.0	0.0
5	9.5	8.5	9.0	5.5	4.5	5.0	1.0	0.0	0.5	0.0	0.0	0.0
6	8.5	7.0	7.5	5.0	4.5	4.5	0.0	0.0	0.0	0.0	0.0	0.0
7	7.5	6.0	7.0	4.5	3.5	4.0	1.0	0.0	0.5	0.0	0.0	0.0
8	7.0	6.0	6.5	3.5	3.0	3.0	2.0	1.0	1.5	0.0	0.0	0.0
9	7.0	6.5	6.5	3.0	2.0	2.5	3.0	2.0	2.5	0.0	0.0	0.0
10	7.0	6.5	7.0	2.0	1.0	1.5	3.0	2.0	2.5	0.0	0.0	0.0
11	7.5	6.5	7.0	1.5	1.0	1.0	1.5	0.5	0.5	0.0	0.0	0.0
12	8.0	7.0	7.5	2.0	1.5	1.5	0.5	0.0	0.0	0.0	0.0	0.0
13	7.5	6.0	7.0	1.5	0.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0
14	6.5	5.5	6.0	2.5	1.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
15	7.0	6.0	6.5	3.5	2.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0
16	6.5	5.0	6.0	3.5	2.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0
17	7.5	6.0	7.0	2.5	1.5	2.0	0.0	0.0	0.0	0.0	0.0	0.0
18	7.5	6.5	7.0	1.5	0.0	0.5	0.0	0.0	0.0	0.5	0.0	0.5
19	6.5	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
20	6.0	5.5	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	5.5	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	5.0	4.5	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	5.0	3.5	4.0	0.0	0.0	0.0	0.5	0.0	0.5	0.0	0.0	0.0
24	3.5	3.5	3.5	1.0	0.0	0.5	1.0	0.5	0.5	0.0	0.0	0.0
25	3.5	2.5	3.0	1.0	0.5	1.0	1.5	1.0	1.0	0.0	0.0	0.0
26	3.5	2.5	3.0	0.5	0.0	0.0	2.0	1.5	1.5	0.0	0.0	0.0
27	4.0	3.0	3.5	0.0	0.0	0.0	2.0	1.5	1.5	0.0	0.0	0.0
28	4.0	3.0	3.5	0.0	0.0	0.0	1.5	0.5	1.0	0.5	0.0	0.0
29	4.0	3.5	3.5	0.0	0.0	0.0	1.5	0.5	1.0	1.5	0.5	1.0
30	4.0	3.5	4.0	0.0	0.0	0.0	1.5	1.0	1.5	1.5	1.0	1.0
31	4.0	4.0	4.0	---	---	---	1.0	0.0	0.0	1.0	0.5	0.5
MONTH	10.0	2.5	6.0	6.5	0.0	2.0	3.0	0.0	0.5	1.5	0.0	0.0

	FEBRUARY			MARCH			APRIL			MAY		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	1.0	0.0	0.5	0.0	0.0	0.0	5.0	4.0	4.5	8.0	5.0	6.5
2	0.5	0.0	0.5	0.0	0.0	0.0	4.5	3.0	3.5	7.5	5.0	6.5
3	0.0	0.0	0.0	0.0	0.0	0.0	5.0	2.5	4.0	7.5	5.0	6.0
4	0.0	0.0	0.0	0.0	0.0	0.0	6.0	3.5	5.0	6.0	4.0	4.5
5	0.0	0.0	0.0	0.0	0.0	0.0	6.0	3.5	5.0	5.0	4.0	4.5
6	0.0	0.0	0.0	0.0	0.0	0.0	6.0	3.5	5.0	6.5	3.5	5.0
7	0.0	0.0	0.0	0.0	0.0	0.0	5.5	3.5	4.5	7.0	4.5	6.0
8	0.0	0.0	0.0	0.0	0.0	0.0	5.0	2.5	4.0	7.0	5.0	6.0
9	0.0	0.0	0.0	0.0	0.0	0.0	4.0	2.5	3.5	7.0	5.0	6.0
10	0.0	0.0	0.0	0.5	0.0	0.5	5.0	2.5	3.5	6.5	5.0	6.0
11	0.0	0.0	0.0	0.5	0.0	0.5	5.0	2.0	3.5	6.5	5.0	5.0
12	0.0	0.0	0.0	0.0	0.0	0.0	4.5	2.5	3.5	7.0	4.0	5.0
13	0.0	0.0	0.0	0.0	0.0	0.0	4.0	2.5	3.0	7.5	5.0	6.0
14	0.0	0.0	0.0	0.5	0.0	0.0	3.0	2.5	2.5	6.5	5.0	5.5
15	0.0	0.0	0.0	1.0	0.0	0.5	3.5	2.5	3.0	7.0	4.0	5.5
16	0.0	0.0	0.0	3.0	1.0	2.0	4.0	2.5	3.0	8.0	5.0	6.5
17	0.0	0.0	0.0	4.0	2.5	3.0	4.0	3.0	3.5	8.0	6.0	7.0
18	0.0	0.0	0.0	3.5	2.5	2.5	4.0	2.5	3.0	7.5	4.5	6.0
19	0.0	0.0	0.0	3.0	1.5	2.5	5.0	2.5	3.5	8.0	5.0	6.5
20	0.5	0.0	0.0	2.5	0.5	1.0	4.5	2.5	3.5	7.5	5.0	6.5
21	0.5	0.0	0.5	2.0	1.0	1.5	4.0	2.5	3.5	8.0	4.5	6.0
22	0.5	0.0	0.0	3.0	1.5	2.5	4.0	3.0	3.5	8.0	6.0	7.0
23	1.0	0.0	0.5	3.0	2.0	2.5	5.0	3.0	4.5	8.0	7.0	7.5
24	1.5	1.0	1.0	2.5	0.5	1.5	6.5	4.0	5.0	8.0	7.0	7.5
25	1.5	1.0	1.5	1.5	1.0	1.5	5.5	4.0	4.5	7.5	6.0	6.5
26	1.0	0.5	0.5	2.5	1.5	2.0	4.0	3.0	3.5	7.5	5.0	6.0
27	1.0	0.0	0.5	2.5	1.5	2.0	4.5	3.0	3.5	9.5	5.5	7.5
28	0.0	0.0	0.0	3.5	1.0	2.0	5.5	3.5	4.5	9.0	7.0	8.0
29	0.0	0.0	0.0	3.5	2.0	3.0	6.5	3.0	5.0	7.5	5.5	6.5
30	---	---	---	5.5	3.0	4.0	8.0	4.5	6.0	7.0	6.0	6.5
31	---	---	---	5.5	3.0	4.5	---	---	---	8.0	6.5	7.0
MONTH	1.5	0.0	0.0	5.5	0.0	1.5	8.0	2.0	4.0	9.5	3.5	6.0

12355500 NORTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

	JUNE			JULY			AUGUST			SEPTEMBER		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	7.5	6.0	7.0	13.5	10.5	11.0	16.0	14.5	15.0	15.0	12.5	14.0
2	8.0	6.0	7.0	11.0	8.0	9.5	17.5	14.5	16.0	15.0	13.0	14.0
3	7.5	6.0	6.5	12.0	9.0	10.5	16.5	14.5	15.5	14.0	12.0	13.5
4	8.0	5.0	6.5	12.0	10.0	11.0	16.0	14.5	15.0	14.5	11.5	13.0
5	9.0	6.0	7.5	12.5	9.5	11.0	15.5	13.5	14.5	14.5	12.0	13.5
6	9.0	7.5	8.0	13.0	10.5	12.0	16.5	13.5	15.0	14.5	11.5	13.0
7	10.0	6.5	7.5	13.0	11.0	12.0	16.0	14.0	15.5	11.5	10.0	10.5
8	11.0	8.0	9.5	12.0	10.0	11.0	15.5	13.0	14.0	11.0	9.0	10.0
9	10.5	8.5	9.5	11.5	10.0	10.5	12.5	11.5	12.0	11.5	9.0	10.0
10	9.5	7.5	8.0	12.5	9.5	11.0	14.0	11.5	12.5	12.0	9.0	10.5
11	8.0	6.5	7.5	14.5	10.5	12.0	15.0	12.5	13.5	11.5	10.0	10.5
12	9.0	7.5	8.0	14.0	11.0	12.0	15.5	13.0	14.0	11.0	10.0	10.5
13	8.0	6.0	6.5	12.5	9.5	11.0	16.0	13.5	15.0	11.0	9.0	10.0
14	8.5	5.0	6.5	13.0	10.0	11.5	15.5	13.0	14.0	11.5	9.0	10.5
15	8.5	7.5	8.0	14.5	10.5	12.5	14.5	13.5	14.0	12.0	9.5	11.0
16	9.0	7.0	8.0	15.5	11.5	13.5	14.0	12.5	13.0	12.5	10.0	11.0
17	10.5	7.5	9.0	15.5	12.5	14.0	12.5	10.5	11.5	13.5	11.5	12.5
18	11.0	8.0	9.5	15.5	13.0	14.5	13.0	10.5	11.5	13.0	11.5	12.5
19	11.0	8.5	10.0	16.0	13.0	14.5	12.5	10.5	11.5	12.5	9.5	11.0
20	10.0	8.5	9.5	15.5	13.0	14.5	13.5	11.0	12.0	11.5	9.0	10.5
21	9.0	7.5	8.0	15.0	13.0	14.0	14.0	11.5	12.5	11.5	9.0	10.5
22	8.5	7.5	8.0	15.0	12.0	13.5	15.0	12.0	13.5	12.0	9.5	11.0
23	8.5	7.5	8.0	16.0	12.5	14.0	15.0	14.0	14.5	12.5	10.0	11.5
24	8.5	7.5	8.0	16.0	13.0	14.0	15.5	13.0	14.5	13.0	11.0	12.0
25	8.5	7.0	7.5	16.0	11.5	13.5	15.0	13.0	14.0	13.0	11.0	12.0
26	9.0	6.5	7.5	16.5	13.5	15.0	14.0	11.0	12.0	12.0	10.5	11.5
27	11.5	7.5	9.0	16.0	13.5	15.0	11.0	9.5	10.0	11.0	9.5	10.5
28	12.5	8.5	10.5	15.5	12.5	14.0	13.0	10.5	11.5	11.0	9.0	10.0
29	13.0	9.5	11.5	15.0	12.5	13.5	14.0	10.5	12.5	11.5	9.0	10.5
30	14.0	11.0	12.5	13.5	11.5	12.5	15.0	12.0	13.5	11.5	9.5	10.5
31	---	---	---	16.0	12.0	13.5	15.0	12.5	14.0	---	---	---
MONTH	14.0	5.0	8.5	16.5	8.0	12.5	17.5	9.5	13.5	15.0	9.0	11.5
YEAR	17.5	0.0	5.5									

TURBIDITY (JTU), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	---	1	1	---	3	10	15	15	2	1
2	0	1	3	2	1	1	---	20	15	---	1	1
3	0	1	20	1	1	1	7	45	20	10	2	---
4	0	1	50	1	1	1	7	60	---	5	1	0
5	0	2	30	2	1	---	3	55	15	5	1	1
6	0	2	3	---	---	1	---	45	15	5	---	1
7	1	2	2	2	1	1	5	---	10	5	2	0
8	0	1	2	1	1	1	15	75	15	---	2	0
9	0	1	2	2	1	1	25	100	40	5	25	1
10	0	1	8	1	1	---	40	100	30	---	15	---
11	0	1	3	2	0	0	40	170	---	5	8	1
12	0	1	2	---	0	0	45	80	15	10	5	1
13	0	1	1	1	---	0	70	50	15	3	3	---
14	0	1	1	1	1	1	25	80	20	2	---	1
15	0	1	---	2	0	1	15	60	15	3	3	1
16	0	1	1	3	1	1	---	40	10	---	3	0
17	0	1	1	2	1	1	2	40	---	---	---	---
18	0	---	1	4	---	2	---	30	---	2	---	1
19	0	1	2	1	1	---	3	25	10	3	---	1
20	---	---	2	1	0	1	1	35	15	2	2	0
21	1	1	1	1	1	1	2	---	15	3	2	1
22	0	1	0	1	1	1	1	25	10	3	1	1
23	0	1	0	1	1	1	2	20	10	---	1	1
24	0	1	1	1	1	1	1	30	10	3	1	0
25	0	0	1	1	0	1	3	35	---	2	---	1
26	0	0	2	---	0	---	2	20	10	2	---	0
27	0	1	1	2	---	1	2	15	10	3	1	---
28	0	---	1	2	1	---	2	---	10	3	1	0
29	1	1	0	2	1	1	1	30	10	4	1	0
30	2	---	0	---	---	1	---	20	15	---	1	0
31	1	---	---	2	---	---	---	15	---	1	2	---
MONTH	0	1	5	1	0	---	10	45	15	---	---	0
YEAR	MAX	170	MIN	0	MEAN	8						

12355500 NORTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	977	5	13	1380	2	7.5	1010	11	30
2	959	5	13	1380	3	11	1680	19	86
3	950	3	7.7	1690	8	37	2650	42	301
4	1080	5	15	2130	5	29	4380	129	1530
5	1160	3	9.4	2660	9	65	4800	190	2460
6	1170	4	13	2870	12	93	3540	80	765
7	1440	4	16	2800	8	60	3080	13	108
8	1530	4	17	2600	6	42	2830	10	76
9	1440	4	16	2380	2	13	2800	10	76
10	1380	10	37	2210	1	6.0	3430	23	213
11	1380	3	11	2040	4	22	3500	22	208
12	1400	5	19	1930	2	10	3130	11	93
13	1380	4	15	1830	8	40	2570	8	56
14	1350	3	11	1750	2	9.5	2200	6	36
15	1330	5	18	1770	3	14	2260	4	24
16	1320	6	21	1890	6	31	2070	7	39
17	1300	4	14	1830	3	15	1870	20	101
18	1260	5	17	1660	3	13	1990	24	129
19	1270	9	31	1410	4	15	2080	12	67
20	1370	6	22	1320	4	14	1990	14	75
21	1410	4	15	1400	4	15	1850	9	45
22	1410	6	23	1490	5	20	1710	5	23
23	1390	9	34	1480	4	16	1630	7	31
24	1350	3	11	1450	7	27	1620	4	17
25	1320	4	14	1400	3	11	1600	7	30
26	1330	5	18	1330	4	14	1550	6	25
27	1290	2	7.0	1280	9	31	1550	6	25
28	1260	7	24	1120	9	27	1450	2	7.8
29	1240	2	6.7	1010	8	22	1410	6	23
30	1240	7	23	977	9	24	1390	5	19
31	1380	6	22	---	---	---	1360	4	15
TOTAL	40066	---	533.8	52467	---	754.0	70980	---	6733.8
		JANUARY			FEBRUARY			MARCH	
1	1150	3	9.3	932	7	18	600	2	3.2
2	1100	1	3.0	932	3	7.6	500	3	4.1
3	1180	8	25	887	2	4.8	450	8	9.7
4	1250	6	20	724	3	5.9	600	6	9.7
5	1320	7	25	550	5	7.4	800	6	13
6	1310	5	18	700	4	7.6	941	5	13
7	1200	4	13	923	4	10	941	6	15
8	1150	3	9.3	1030	2	5.6	887	15	36
9	1170	4	13	1110	3	9.0	836	10	23
10	1200	3	9.7	1070	2	5.8	780	8	17
11	1210	7	23	1020	2	5.5	748	7	14
12	1170	5	16	1050	2	5.7	644	3	5.2
13	1140	2	6.2	1040	2	5.6	686	2	3.7
14	1090	3	8.8	1030	1	2.8	686	4	7.4
15	1130	3	9.2	977	1	2.6	665	2	3.6
16	1200	8	26	923	2	5.0	693	7	13
17	1210	6	20	887	2	4.8	732	8	16
18	1220	10	33	887	2	4.8	780	8	17
19	1210	1	3.3	844	2	4.6	796	6	13
20	1150	2	6.2	844	2	4.6	788	4	8.5
21	1120	2	6.0	820	1	2.2	756	2	4.1
22	1120	2	6.0	780	5	11	732	1	2.0
23	1170	3	9.5	812	2	4.4	732	2	4.0
24	1140	5	15	820	4	8.9	732	1	2.0
25	1090	1	2.9	812	2	4.4	740	2	4.0
26	1070	5	14	804	1	2.2	724	2	3.9
27	1110	8	24	796	2	4.3	716	2	3.9
28	1090	3	8.8	740	3	6.0	708	2	3.8
29	1050	3	8.5	679	2	3.7	700	2	3.8
30	1030	2	5.6	---	---	---	692	2	3.7
31	986	2	5.3	---	---	---	708	3	5.7
TOTAL	35736	---	402.6	25423	---	174.8	22494	---	286.0

12355500 NORTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	764	3	6.2	4280	22	254	9540	33	850
2	780	3	6.3	5780	63	983	8730	25	589
3	788	3	6.4	7880	167	3550	8180	15	331
4	836	3	6.8	9990	328	8850	7650	11	227
5	959	10	26	10700	273	7890	6940	12	225
6	1190	15	48	11000	181	5380	6770	13	238
7	1600	28	121	11300	233	7110	6890	11	205
8	2230	43	259	12900	435	15200	7180	20	388
9	3100	77	644	15600	591	24900	8670	57	1330
10	4140	120	1340	18100	612	29900	10500	88	2490
11	5340	150	2160	22600	931	56800	10300	67	1860
12	6380	173	2980	21200	614	35100	9360	43	1090
13	7700	173	3600	16800	240	10900	8880	25	599
14	7500	93	1880	17600	297	14100	8180	26	574
15	6480	45	787	16900	248	11300	7350	21	417
16	5480	32	473	14100	135	5140	7330	18	356
17	4820	29	377	13500	119	4340	7730	18	376
18	4260	15	173	13100	116	4100	7980	20	431
19	3900	8	84	12200	85	2800	8400	26	590
20	3640	8	79	12600	131	4460	9120	39	960
21	3460	2	19	12700	104	3570	9300	35	879
22	3230	2	17	11200	59	1780	8670	22	515
23	3050	4	33	11100	54	1620	8640	25	583
24	3020	5	41	12600	112	3810	8430	19	432
25	3290	23	204	13700	156	5770	8000	11	238
26	3250	3	26	12400	69	2310	7400	9	180
27	3220	6	52	10500	35	992	6650	2	36
28	3170	5	43	11800	63	2010	6230	6	101
29	3140	5	42	13200	83	2960	6440	13	226
30	3350	8	72	11400	49	1510	7450	23	463
31	---	---	---	10200	38	1050	---	---	---
TOTAL	104067	---	15605.7	398930	---	280439	242890	---	17779
		JULY			AUGUST			SEPTEMBER	
1	8790	36	854	2870	3	23	2090	2	11
2	8230	32	711	2790	1	7.5	2010	2	11
3	7350	23	456	2790	6	45	1910	4	21
4	6990	12	226	2750	2	15	1850	5	25
5	6990	8	151	2870	2	15	1780	2	9.6
6	6890	14	260	2880	3	23	1750	3	14
7	6870	12	223	2980	3	24	1780	2	9.6
8	7200	6	117	2880	6	47	1760	2	9.5
9	7400	11	220	4370	52	614	1690	2	9.1
10	6820	10	184	5320	45	646	1620	7	31
11	6230	8	135	4880	16	211	1560	11	46
12	6160	16	266	4310	6	70	1540	2	8.3
13	6870	14	260	3860	2	21	1500	4	16
14	6390	3	52	3550	5	48	1450	6	23
15	5770	9	140	3480	8	75	1400	2	7.6
16	5320	15	215	3490	5	47	1350	4	15
17	5040	10	136	3780	4	41	1310	3	11
18	4900	7	93	3640	3	29	1300	2	7.0
19	4770	3	39	3320	2	18	1280	2	6.9
20	4610	4	50	3190	1	8.6	1250	3	10
21	4470	3	36	3250	3	26	1220	2	6.6
22	4180	6	68	3080	7	58	1180	5	16
23	3900	5	53	2960	6	48	1160	7	22
24	3710	3	30	2910	3	24	1150	4	12
25	3690	3	30	2770	3	22	1160	1	3.1
26	3530	6	57	2790	4	30	1140	2	6.2
27	3370	2	18	2790	4	30	1130	3	9.2
28	3250	3	26	2640	3	21	1110	3	9.0
29	3100	4	33	2480	5	33	1090	7	21
30	3080	4	33	2330	2	13	1060	2	5.7
31	3030	5	41	2190	6	35	---	---	---
TOTAL	168900	---	5213	100190	---	2368	43580	---	412.4
YEAR	1305723		330745.2						

12355500 NORTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PERIPHYTON

Date	Length of exposure (days)	Biomass (g/m^2) Dry weight	Ash weight	Chlorophyll a (mg/m^2)	Chlorophyll b (mg/m^2)	Biomass pigment ratio	Sampling method
Nov 7	28	1.50	1.40	.000	.000	1600	Polyethylene strip
Apr 27	32	8.23	6.85	.000	.000	10	
May 28	31	.462	.154	.000	.000	10	
Jul 23	35	6.46	5.23	1.28	.098	960	
Aug 19	27	20.7	18.5	3.65	.000	610	
Sep 24	36	8.69	7.62	1.47	.070	740	

PHYTOPLANKTON
OCT. 10, 1975
1100 HOURS
46 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...CYMBELLACEAE				
O	....CYMBELLA		9	20	
	...FRAGILARIACEAE				
L	....SYNEDRA			0	
	...GOMPHONEMATACEAE				
O	....GOMPHONEMA		9	20	
	...NITZSCHIACEAE				
O	....NITZSCHIA		28	60	
		TOTALS	46	100	1.371=DIVERSITY

NOTE: O - DOMINANT ORGANISM: GREATER OR EQUAL TO 15%
L - LESS THEN 1%: MAY NOT HAVE BEEN ACTUALLY COUNTED
ANALYSIS METHOD: SEDGWICK-RAFTER CHAMBER , 200-X MICROSCOPE
DIVERSITY INDICES, BASED ON ACTUAL COUNTS:
FAMILY 1.371
GENERA 1.371

NOV. 7, 1975
1030 HOURS
380 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
L	....CYCLOTELLA			0	
L	....MELOSIRA			0	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
O	....ACHNANTHES		130	33	
	....COCCONEIS		16	4	
	...CYMBELLACEAE				
	....CYMBELLA		31	8	
	...FRAGILARIACEAE				
	....HANNAEA		16	4	
	....SYNEDRA		16	4	
	...GOMPHONEMATACEAE				
O	....GOMPHONEMA		78	21	
	...MERIDIONACEAE				
L	....MERIDION			0	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		47	13	
	...NITZSCHIACEAE				
	....NITZSCHIA		47	13	
		TOTALS	380	100	2.622=DIVERSITY

FAMILY 2.350
GENERA 2.622

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
DEC. 10, 1975
1330 HOURS
310 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
D	....ACHNANTHES		61	20	
	....COCCONEIS		15	5	
	...CYMBELLACEAE				
	....CYMBELLA		31	10	
	...DIATOMACEAE				
	....DIATOMA		15	5	
	...FRAGILARIACEAE				
L	....HANNAEA			0	
L	....SYNEDRA			0	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		170	55	
	...NITZSCHIACEAE				
	....NITZSCHIA		15	5	
		TOTALS	310	100	1.919=DIVERSITY

FAMILY 1.739
GENERA 1.919

JAN. 26, 1976
1300 HOURS
140 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
D	....ACHNANTHES		72	50	
	...CYMBELLACEAE				
L	....CYMBELLA			0	
	...FRAGILARIACEAE				
L	....HANNAEA			0	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		48	33	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		12	8	
	...NITZSCHIACEAE				
	....NITZSCHIA		12	8	
		TOTALS	140	99	1.626=DIVERSITY

FAMILY 1.626
GENERA 1.626

FEB. 24, 1976
1300 HOURS
270 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
D	....ACHNANTHES		43	16	
	...CYMBELLACEAE				
	....CYMBELLA		11	4	
	...FRAGILARIACEAE				
	....HANNAEA				
	.....H.ARCUS		11	4	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		140	52	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		22	8	
	...NITZSCHIACEAE				
D	....NITZSCHIA		43	16	
		TOTALS	270	100	2.000=DIVERSITY

FAMILY 2.000
GENERA 2.000

12355500 NORTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
MAR. 26, 1976
1100 HOURS
340 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..VOLVOCALES				
	...CHLAMYDOMONADACEAE				
	....CHLAMYDOMONAS		18	5	
	..ZYGNEMATALES				
	...DESMIDIACEAE	PLACODERM DESMIDS			
	....CLOSTERIUM		9	3	
		TOTALS	28	8	0.918=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		46	14	
L	....COCCONEIS			0	
	...CYMBELLACEAE				
O	....CYMBELLA		64	19	
	...DIATOMACEAE				
	....DIATOMA		9	3	
	...GOMPHONEMATACEAE				
O	....GOMPHONEMA		130	38	
	...MERIDIONACEAE				
O	....MERIDION		64	19	
		TOTALS	310	93	2.022=DIVERSITY

PHYL/DIV 0.406
CLASS 0.406
ORDER 0.480
FAMILY 2.339
GENERA 2.339

MAY 28, 1976
1330 HOURS
280 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....OOCYSTIS		4	1	
	..ULOTRICHALES				
	...ULOTRICHACEAE				
O	....ULOTHRIX		180	63	
		TOTALS	180	64	0.154=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		8	3	
	...CYMBELLACEAE				
	....CYMBELLA		4	1	
	...EUNOTIACEAE				
	....EUNOTIA		4	1	
	...FRAGILARIACEAE				
L	....ASTERIONELLA			0	
	....FRAGILARIA		20	7	
	....HANNAEA		4	1	
	....SYNEDRA		4	1	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		20	7	
	...MERIDIONACEAE				
	....MERIDION		4	1	
	...NITZSCHIACEAE				
	....NITZSCHIA		16	6	
		TOTALS	85	28	2.810=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
	..CHRYSOMONADALES				
	...OCHROMONADACEAE				
	....DINOBRYON		16	6	
		TOTALS	16	6	0.000=DIVERSITY

PHYL/DIV 0.940
CLASS 1.167
ORDER 1.266
FAMILY 1.994
GENERA 2.109

12355500 NORTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
JUNE 18, 1976
1130 HOURS
270 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		16	6	
	....MELOSIRA		8	3	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		16	6	
	...CYMBELLACEAE				
	....CYMBELLA		8	3	
	...DIATOMACEAE				
L	....DIATOMA			0	
	...FRAGILARIACEAE				
	....HANNAEA		16	6	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		65	24	
	...NAVICULACEAE	NAVICULOID			
D	....NAVICULA		40	15	
	...NITZSCHIACEAE				
D	....NITZSCHIA		81	30	
		TOTALS	250	93	2.540=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
	..CHRYSOMONADALES				
	...OCHROMONADACEAE				
	....DINOBRYON		16	6	
		TOTALS	16	6	0.000=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...NOSTOCACEAE				
L	....ANABAENA			0	

CLASS 0.330
ORDER 0.761
FAMILY 2.633
GENERA 2.716

JULY 23, 1976
1700 HOURS
220 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..TETRASPORALES				
	...COCCOMYXACEAE				
L	....ELAKATOTHRIX			0	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		24	11	
	....COCCONEIS		6	3	
	...CYMBELLACEAE				
	....CYMBELLA		18	8	
	...FRAGILARIACEAE				
D	....FRAGILARIA		36	16	
	....HANNAEA		24	11	
D	....SYNEDRA		42	19	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		61	27	
	...TABELLARIACEAE				
	....TABELLARIA		6	3	
		TOTALS	220	98	2.694=DIVERSITY
	.CHRYSOPHYCEAE	YELLOW-BROWN ALGAE			
	..CHRYSOMONADALES				
	...OCHROMONADACEAE				
	....DINOBRYON		6	3	
		TOTALS	6	3	0.000=DIVERSITY

CLASS 0.179
ORDER 0.179
FAMILY 1.991
GENERA 2.800

12355500 NORTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

PHYTOPLANKTON
AUG. 19, 1976
1500 HOURS
1,800 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHLOROPHYTA	GREEN ALGAE			
	.CHLOROPHYCEAE				
	..CHLOROCOCCALES				
	...OOCYSTACEAE				
	....ANKISTRODESMUS		96	5	
	....KIRCHNERIELLA		130	7	
	...SCENEDESMACEAE				
	....CRUCIGENIA		130	7	
O	....SCENEDESMUS		540	30	
		TOTALS	890	49	1.584=DIVERSITY
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..CENTRALES	CENTRIC			
	...COSCINODISCACEAE				
	....CYCLOTELLA		32	2	
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		64	4	
	....COCCONEIS		32	2	
	...DIATOMACEAE				
	....DIATOMA		32	2	
	...FRAGILARIACEAE				
	....SYNEDRA		96	5	
	...GOMPHONEMATACEAE				
	....GOMPHONEMA		130	7	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA		64	4	
	...NITZSCHIACEAE				
	....NITZSCHIA		130	7	
		TOTALS	570	33	2.795=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..CHROOCOCCALES	COCCOID			
	...CHROOCOCCACEAE				
D	....ANACYSTIS		350	19	
		TOTALS	350	19	0.000=DIVERSITY

PHYL/DIV 1.487
CLASS 1.487
ORDER 1.585
FAMILY 2.720
GENERA 3.148

SEP. 24, 1976
1030 HOURS
9 CELLS/ML

	ORGANISM NAME	COMMON NAME	CELLS/ML	PER CENT	
	CHRYSOPHYTA				
	.BACILLARIOPHYCEAE	DIATOMS			
	..PENNALES	PENNATE			
	...ACHNANTHACEAE				
	....ACHNANTHES		1	11	
	....COCCONEIS			3	
	...CYMBELLACEAE				
	....CYMBELLA			8	
	...DIATOMACEAE				
	....DIATOMA			3	
	...FRAGILARIACEAE				
L	....HANNAEA			0	
	....SYNEDRA		1	14	
	...GOMPHONEMATACEAE				
D	....GOMPHONEMA		5	49	
	...NAVICULACEAE	NAVICULOID			
	....NAVICULA			8	
	...NITZSCHIACEAE				
	....NITZSCHIA			5	
		TOTALS	9	101	2.340=DIVERSITY
	CYANOPHYTA	BLUE-GREEN ALGAE			
	.MYXOPHYCEAE				
	..OSCILLATORIALES	FILAMENTOUS			
	...OSCILLATORIACEAE				
L	....OSCILLATORIA			0	

FAMILY 2.242
GENERA 2.340

12358500 MIDDLE FORK FLATHEAD RIVER NEAR WEST GLACIER, MT

LOCATION.--Lat 48°29'43", long 114°00'33", in S½SW¼NE¼ sec.34, T.32 N., R.19 W., Flathead County, Hydrologic Unit 17010207, on left bank 0.8 mi (1.3 km) downstream from McDonald Creek, 1.3 mi (2.1 km) west of West Glacier (formerly Belton), and 3.8 mi (6.1 km) upstream from mouth.

DRAINAGE AREA.--1,128 mi² (2,922 km²).

PERIOD OF RECORD.--October 1939 to current year. Prior to October 1947, published as "near Belton."

REVISED RECORDS.--WSP 1216: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,128.72 ft (953.634 m) above mean sea level. Prior to Nov. 22, 1950, nonrecording gage at present site and datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--37 years, 2,993 ft³/s (84.76 m³/s), 36.04 in/yr (915 mm/yr), 2,168,000 acre-ft/yr (2.67 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 140,000 ft³/s (3,960 m³/s) June 9, 1964, gage height, 36.46 ft (11.113 m), from floodmarks, from rating curve extended above 31,000 ft³/s (878 m³/s), on basis of contracted-opening measurement at gage height, 19.42 ft (5.919 m) and flood volume-hydrographic comparison; minimum, less than 173 ft³/s (4.90 m³/s) Nov. 27, 1952 (stage below intake pipe).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 22,600 ft³/s (640 m³/s) May 11, gage height, 9.15 ft (2.789 m); minimum, 610 ft³/s (17.3 m³/s) Mar. 15, gage height, 1.53 ft (0.466 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	820	1230	1030	1060	1020	703	767	3420	9860	8960	2590	1630
2	802	1320	1780	1020	996	696	778	4790	9350	7730	2650	1580
3	804	2220	3970	1020	973	703	787	7010	8630	6960	2570	1520
4	1210	3340	6180	1100	955	712	841	8750	7920	6830	2480	1460
5	1410	3540	6580	1160	848	722	965	9080	7510	7020	2500	1420
6	1340	3240	4880	1070	806	709	1270	9130	7950	6920	2340	1450
7	1530	2990	4070	913	862	706	1960	9910	8830	7140	2480	1480
8	1610	2690	3570	956	930	698	2890	11900	9350	7360	2390	1410
9	1500	2450	3450	1000	948	694	4080	15500	11900	7020	2430	1310
10	1420	2260	3560	1020	897	695	4750	17900	12800	6210	2880	1230
11	1390	2080	3410	1010	890	710	5860	21200	12000	5710	2740	1170
12	1380	1940	3180	996	932	660	6960	17300	10400	6060	2500	1150
13	1340	1820	2860	976	912	663	7810	14300	9220	6730	2320	1130
14	1280	1750	2510	962	931	640	7000	18100	8050	5860	2210	1080
15	1260	1780	2530	952	906	635	6040	16500	7110	5210	2180	1040
16	1290	1900	2350	1050	902	645	5160	13700	6990	4880	2520	1020
17	1240	1840	2210	1090	886	669	4510	13400	7550	4750	2670	1030
18	1220	1710	2110	1230	863	750	4050	13300	7450	4620	2370	1030
19	1260	1500	2020	1310	838	794	3750	12400	7830	4490	2180	997
20	1370	1290	1890	1260	833	771	3560	12600	8990	4360	2460	974
21	1400	1290	1750	1210	820	747	3350	11400	9350	4230	2840	940
22	1400	1320	1600	1150	799	733	3110	10600	8570	3990	2550	928
23	1350	1360	1560	1230	795	779	2930	11300	8660	3650	2410	903
24	1290	1390	1580	1170	786	765	2800	13100	8370	3530	2300	891
25	1250	1360	1520	1130	785	755	3010	14500	7580	3460	2180	928
26	1220	1300	1480	1100	774	740	3020	12400	6730	3320	2250	903
27	1180	1210	1490	1100	769	728	2930	10800	5970	3230	2130	879
28	1140	1070	1400	1100	768	722	2840	12700	5800	3010	1960	855
29	1100	987	1330	1080	720	708	2750	12000	6360	2820	1830	843
30	1080	949	1340	1070	---	707	2860	10300	8020	2700	1720	832
31	1230	---	1280	1040	---	730	---	9860	---	2670	1660	---
TOTAL	39116	55126	80470	33535	25144	22089	103388	379150	255100	161490	73290	34013
MEAN	1262	1838	2596	1082	867	713	3446	12230	8503	5209	2364	1134
MAX	1610	3540	6580	1310	1020	794	7810	21200	12800	8960	2880	1630
MIN	802	949	1030	913	720	635	767	3420	5800	2670	1660	832
CFSM	1.12	1.63	2.30	.96	.77	.63	3.05	10.8	7.54	4.62	2.10	1.01
IN.	1.29	1.82	2.65	1.11	.83	.73	3.41	12.50	8.41	5.33	2.42	1.12
AC-FT	77590	109300	159600	66520	49870	43810	205100	752000	506000	320300	145400	67460

CAL YR 1975 TOTAL 1338706 MEAN 3668 MAX 54400 MIN 276 CFSM 3.25 IN 44.15 AC-FT 2655000
WTR YR 1976 TOTAL 1261911 MEAN 3448 MAX 21200 MIN 635 CFSM 3.06 IN 41.62 AC-FT 2503000

12359800 SOUTH FORK FLATHEAD RIVER ABOVE TWIN CREEK, NEAR HUNGRY HORSE, MT

LOCATION.--Lat 47°58'45", long 113°33'36", in NE¼NW¼NE¼ sec.36, T.26 N., R.16 W., Flathead County, Hydrologic Unit 17010209, Flathead National Forest, on left bank 0.1 mi (0.2 km) downstream from Tin Creek, 0.4 mi (0.6 km) upstream from Twin Creek, 36.3 mi (58.4 km) southeast of Hungry Horse, and at mile 46.7 (75.1 km).

DRAINAGE AREA.--1,160 mi^2 (3,004 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,575 ft (1,090 m), from river-profile map.

REMARKS.--Water-discharge records good.

AVERAGE DISCHARGE.--12 years, 2,447 ft^3/s (69.30 m^3/s), 28.65 in/yr (728 mm/yr), 1,773,000 acre-ft/yr (2.19 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,200 ft^3/s (855 m^3/s) June 16, 1974, gage height, 15.20 ft (4.633 m); minimum, 156 ft^3/s (4.42 m^3/s) Dec. 8, 1971, gage height, 4.31 ft (1.314 m), result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 8, 1964, reached a stage of 20.87 ft (6.361 m), from high-water profile; discharge, 50,900 ft^3/s (1,440 m^3/s), by slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20,600 ft^3/s (583 m^3/s) May 14, gage height, 13.04 ft (3.975 m); minimum daily, 350 ft^3/s (9.91 m^3/s) Mar. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	561	876	707	572	661	400	567	2680	9420	8040	1430	727
2	551	932	1360	520	655	360	584	3680	8460	6740	1420	700
3	534	1450	2140	560	637	350	584	5110	7810	5930	1380	674
4	601	1970	2670	600	450	360	630	6200	7670	5740	1370	649
5	630	1980	2640	620	420	380	811	7340	7810	5550	1320	630
6	607	1900	2110	660	430	400	1250	7150	8370	5510	1250	649
7	687	1820	1950	700	460	410	2040	7230	9080	5670	1270	680
8	811	1680	1760	680	540	430	2880	8870	9700	5510	1250	649
9	811	1550	1720	680	580	460	3820	11700	13600	5260	1200	618
10	797	1430	1790	661	640	517	3960	14000	14400	4710	1180	595
11	804	1350	1760	661	687	496	5020	17100	13600	4260	1140	578
12	811	1260	1660	637	693	400	6050	14100	11100	4510	1070	572
13	824	1180	1460	618	693	380	6400	12100	9270	4980	1010	551
14	846	1140	1270	584	661	390	5740	18200	7620	4180	987	534
15	868	1150	1380	630	630	400	5220	16800	6530	3600	1010	517
16	915	1220	1270	700	595	420	4510	13600	6350	3340	1000	506
17	899	1150	1140	783	595	470	3890	13200	6900	3130	1030	501
18	907	1050	1080	876	584	529	3420	12800	6640	3000	987	485
19	963	831	987	846	551	561	3090	11400	6850	2880	956	475
20	1040	754	868	754	545	551	2850	11300	8280	2700	1040	464
21	1080	811	840	640	523	529	2640	10100	8490	2620	1130	459
22	1120	811	820	620	506	517	2470	9960	8490	2500	1050	450
23	1060	963	840	600	540	540	2320	10600	8100	2280	995	445
24	987	1000	860	620	529	523	2210	12700	7260	2140	987	464
25	956	940	880	660	517	517	2320	13900	6280	2110	948	480
26	956	883	900	687	512	512	2320	11800	5370	1980	963	475
27	915	811	900	754	512	506	2250	10900	4770	1850	940	454
28	883	727	839	776	501	496	2110	12800	4670	1750	883	445
29	846	649	817	727	485	496	2040	11300	5220	1630	839	430
30	831	578	824	713	---	490	2150	9830	6960	1540	797	419
31	899	---	761	680	---	506	---	9670	---	1470	761	---
TOTAL	26000	34846	41003	20819	16332	14296	80146	338120	245130	117230	33593	16275
MEAN	839	1162	1323	672	563	461	2872	10910	8171	3782	1084	543
MAX	1120	1980	2670	876	693	561	6400	18200	14400	8040	1430	727
MIN	534	578	707	520	420	350	567	2680	4670	1470	761	419
CFSM	.72	1.00	1.14	.58	.49	.40	2.48	9.41	7.04	3.26	.93	.47
IN.	.83	1.12	1.31	.67	.52	.46	2.76	10.84	7.86	3.76	1.08	.52
AC-FT	51570	69120	81330	41290	32390	28360	170900	670700	486200	232500	66630	32280

CAL YR 1975 TOTAL 936403 MEAN 2565 MAX 18000 MIN 200 CFSM 2.21 IN 30.03 AC-FT 1857000
WTR YR 1976 TOTAL 989790 MEAN 2704 MAX 18200 MIN 350 CFSM 2.33 IN 31.74 AC-FT 1963000

12359800 SOUTH FORK FLATHEAD RIVER ABOVE TWIN CREEK, NEAR HUNGRY HORSE, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965 to current year.
INSTRUMENTATION.--Temperature recorder since May 1965.
EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 19.5°C Aug. 3, 4, 1973; minimum, 0.0°C on many days during winter periods most years.
EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 18.0°C Aug. 14; minimum, 0.0°C on many days during December to March.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	11.0	9.0	5.5	5.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0
2	11.0	9.0	5.5	5.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0
3	10.5	9.0	6.0	5.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0
4	10.5	9.5	6.0	5.5	2.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
5	10.5	9.0	5.5	5.0	2.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
6	10.0	9.0	5.5	5.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0
7	9.5	9.0	5.5	4.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0
8	9.0	8.0	4.5	4.0	3.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
9	8.0	8.0	4.0	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
10	8.0	7.5	3.0	2.5	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
11	8.0	8.0	2.5	2.0	3.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
12	8.0	7.5	3.0	2.5	1.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
13	8.0	8.0	3.0	2.5	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
14	8.0	7.5	3.0	2.5	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
15	7.5	7.0	3.5	3.0	1.0	0.5	0.0	0.0	0.0	0.0	0.5	0.0
16	8.0	7.0	3.5	3.5	1.0	0.5	0.0	0.0	0.0	0.0	1.0	0.0
17	8.0	7.0	3.5	3.0	0.5	0.5	0.0	0.0	0.0	0.0	1.0	0.5
18	7.5	7.0	3.0	2.0	0.5	0.5	0.0	0.0	0.0	0.0	0.5	0.5
19	7.0	6.0	2.0	2.0	0.5	0.5	0.0	0.0	0.0	0.0	1.5	0.5
20	6.5	6.0	2.0	2.0	0.5	0.0	0.0	0.0	0.0	0.0	1.0	0.5
21	6.5	5.5	2.0	2.0	0.5	0.0	0.0	0.0	0.0	0.0	2.0	1.0
22	5.5	3.5	2.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	3.0	1.5
23	5.5	4.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	2.5	2.0
24	4.5	4.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	2.0	1.0
25	4.5	4.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.5
26	4.5	4.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	2.0	1.0
27	5.5	4.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	2.5	1.5
28	5.0	4.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	2.0	1.0
29	4.5	4.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	3.0	1.0
30	5.0	4.5	1.5	1.5	0.0	0.0	0.0	0.0	---	---	4.5	2.0
31	5.5	5.0	---	---	0.0	0.0	0.0	0.0	---	---	4.5	2.0
MONTH	11.0	3.5	6.0	1.5	3.0	0.0	0.0	0.0	0.0	0.0	4.5	0.0
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	4.0	3.0	7.5	5.5	8.0	6.5	11.5	9.0	16.0	15.5	16.5	13.5
2	3.0	2.0	7.0	5.5	8.0	7.0	11.0	8.5	16.5	14.5	16.5	14.0
3	4.5	1.5	7.0	5.5	8.5	7.0	11.0	9.0	17.5	15.5	16.0	13.0
4	5.0	2.0	6.0	4.5	9.5	7.0	11.0	10.0	16.5	15.0	16.0	13.0
5	5.5	2.5	5.5	4.5	10.0	8.0	11.5	9.5	17.0	14.5	16.0	13.0
6	5.0	3.5	6.0	5.0	10.0	8.5	12.5	10.5	17.5	15.0	15.5	14.0
7	4.0	2.5	7.0	5.0	9.5	8.0	12.5	11.5	16.5	15.5	14.0	12.0
8	4.0	2.5	7.0	5.5	10.5	8.0	12.0	11.0	16.0	14.5	13.0	11.0
9	3.5	2.5	7.0	5.5	10.5	8.5	12.0	10.5	15.0	14.5	13.0	10.0
10	4.5	3.0	7.0	5.0	10.0	8.0	12.0	10.5	15.5	14.0	13.0	10.0
11	4.0	3.0	7.0	5.5	9.0	7.5	13.0	11.0	17.0	14.5	12.5	10.5
12	4.0	3.0	7.0	5.0	8.0	7.5	13.0	12.0	17.5	14.5	12.0	11.5
13	3.5	3.0	7.0	5.5	8.0	7.0	12.5	11.0	17.5	15.0	13.0	10.5
14	4.0	3.0	7.0	5.5	8.5	6.5	12.5	11.5	18.0	15.5	13.0	10.5
15	4.0	3.5	7.0	5.0	8.5	7.5	13.5	11.5	17.5	15.5	13.5	10.5
16	4.0	3.0	7.5	5.5	8.0	7.5	14.0	12.0	15.5	14.5	13.0	10.5
17	4.0	3.5	7.5	6.0	8.0	7.5	14.0	13.0	15.5	13.0	14.5	11.5
18	4.0	3.5	7.0	5.5	9.5	7.0	14.5	13.0	15.0	14.0	14.0	12.5
19	4.5	4.0	7.5	5.5	10.0	8.0	14.5	13.0	15.0	13.5	12.5	10.0
20	4.5	3.5	7.5	6.0	10.0	8.5	14.5	13.0	15.0	14.0	12.0	9.0
21	5.0	3.5	7.5	5.5	9.0	8.0	14.5	13.5	15.0	13.0	12.0	9.5
22	5.0	4.5	8.0	6.5	9.0	8.0	14.5	13.0	16.5	13.5	12.5	10.0
23	5.0	4.5	8.0	6.5	8.5	7.0	15.5	14.0	15.5	15.0	12.5	10.0
24	5.5	4.5	8.0	6.5	8.0	7.0	15.5	14.5	16.5	14.0	12.0	10.5
25	5.5	4.5	8.0	6.5	8.0	7.0	16.0	13.5	16.5	14.0	12.5	11.0
26	5.5	4.0	8.0	6.0	8.5	7.0	16.5	14.5	15.0	13.0	12.5	10.5
27	5.0	4.5	9.0	6.5	10.0	8.0	16.0	15.0	13.0	11.5	11.5	9.0
28	5.0	4.0	9.0	7.0	10.5	8.5	15.5	13.5	15.0	12.0	11.0	8.5
29	7.0	4.5	8.0	6.0	11.5	9.5	15.5	14.0	15.5	13.0	11.0	8.5
30	7.5	5.5	7.5	6.5	11.5	10.0	15.5	15.0	16.5	13.0	11.0	9.0
31	---	---	8.0	7.0	---	---	16.5	14.0	16.5	13.5	---	---
MONTH	7.5	1.5	9.0	4.5	11.5	6.5	16.5	8.5	18.0	11.5	16.5	8.5
YEAR	18.0	0.0										

12361000 SULLIVAN CREEK NEAR HUNGRY HORSE, MT

LOCATION.--Lat 48°01'45", long 113°42'12", in NW¼SW¼ sec.12, T.26 N., R.17 W., Flathead County, Hydrologic Unit 17010209, Flathead National Forest, on left bank 0.3 mi (0.5 km) downstream from Quintonkon Creek, 1.7 mi (2.7 km) upstream from Hungry Horse Reservoir flowline, and 29.5 mi (47.5 km) southeast of Hungry Horse.

DRAINAGE AREA.--71.3 mi^2 (184.7 km^2).

PERIOD OF RECORD.--September 1948 to September 1956, August 1959 to September 1976 (discontinued).

REVISED RECORDS.--WSP 1216: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 3,630 ft (1,106 m), from topographic map.

REMARKS.--Records good except those for winter period, which are poor.

AVERAGE DISCHARGE.--25 years, 225 ft^3/s (6.372 m^3/s), 42.86 in/yr (1,089 mm/yr), 163,000 acre-ft/yr (201 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,020 ft^3/s (142 m^3/s) June 8, 1964, gage height, 7.21 ft (2.198 m), in gage well, 8.3 ft (2.53 m), from outside floodmarks, from rating curve extended above 1,800 ft^3/s (51.0 m^3/s) on basis of slope-area measurement of peak flow; minimum daily, 10 ft^3/s (0.28 m^3/s) Nov. 26, 1952.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,400 ft^3/s (39.6 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 11	0400	*2240	63.4	*5.24	1.597	May 14	0730	1570	44.5	4.56	1.390

Minimum discharge, 27 ft^3/s (0.76 m^3/s) Sept. 30, gage height, 1.55 ft (0.472 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	130	130	80	88	43	53	338	697	404	73	48
2	47	187	250	70	87	40	52	500	627	338	71	45
3	47	392	380	76	71	35	51	668	541	306	68	45
4	84	437	468	90	66	37	65	706	495	293	66	43
5	62	378	407	100	56	39	106	751	498	279	66	41
6	64	325	295	110	60	40	168	751	564	261	65	54
7	108	286	239	99	66	41	244	833	649	251	78	52
8	114	244	209	99	70	43	342	1080	729	238	67	46
9	107	215	241	80	72	44	402	1380	854	216	79	43
10	106	192	258	69	70	44	436	1530	802	193	82	40
11	116	172	239	66	68	45	545	1920	703	177	70	39
12	117	158	214	65	66	46	620	1270	593	209	63	40
13	115	145	179	63	64	47	663	1150	513	213	59	39
14	110	140	195	64	62	43	553	1480	432	178	56	38
15	114	156	173	69	60	38	462	1170	391	162	56	36
16	111	166	146	119	58	39	368	1020	471	149	83	35
17	107	150	131	151	56	47	303	1040	515	139	74	40
18	106	133	120	178	56	64	263	990	490	131	65	35
19	114	118	111	165	55	63	235	908	510	125	61	33
20	125	115	105	153	53	55	216	911	541	119	87	32
21	123	110	100	150	52	52	197	767	499	115	74	32
22	122	105	105	140	50	51	184	751	470	108	66	32
23	119	110	110	130	50	51	172	880	630	101	65	31
24	113	115	115	117	49	49	176	1050	616	98	63	32
25	108	117	99	113	47	51	208	1130	525	96	62	32
26	106	107	100	103	47	46	195	859	453	90	75	30
27	101	100	103	104	46	45	192	827	400	84	65	30
28	98	95	92	99	45	44	186	984	379	81	60	29
29	93	90	90	97	46	43	194	782	395	77	57	28
30	100	85	97	94	---	42	240	671	436	79	54	28
31	146	---	82	91	---	46	---	711	---	79	51	---
TOTAL	3150	5273	5583	3204	1736	1413	8091	29808	16423	5389	2081	1128
MEAN	102	176	180	103	59.9	45.6	270	962	547	174	67.1	37.6
MAX	146	437	468	178	88	64	663	1920	854	404	87	54
MIN	47	85	82	63	45	35	51	338	379	77	51	28
CFSM	1.43	2.47	2.52	1.44	.84	.64	3.79	13.5	7.67	2.44	.94	.53
IN.	1.64	2.75	2.91	1.67	.91	.74	4.22	15.55	8.57	2.81	1.09	.59
AC-FT	6250	10460	11070	6360	3440	2800	16050	59120	32580	10690	4130	2240

CAL YR 1975 TOTAL 89487 MEAN 245 MAX 2060 MIN 15 CFSM 3.44 IN 46.69 AC-FT 177600
WTR YR 1976 TOTAL 83279 MEAN 228 MAX 1920 MIN 28 CFSM 3.20 IN 43.45 AC-FT 165200

12362000 HUNGRY HORSE RESERVOIR NEAR HUNGRY HORSE, MT

LOCATION.--Lat 48°20'28", long 114°00'48", in NE¼NE¼NW¼ sec.27, T.30 N., R.19 W., Flathead County, Hydrologic Unit 17010209, in block 14 of Hungry Horse Dam on South Fork Flathead River, 3.8 mi (6.1 km) southeast of Hungry Horse, and at mile 5.2 (8.4 km).

DRAINAGE AREA.--1,654 mi² (4,284 km²).

PERIOD OF RECORD.--September 1951 to current year.

GAGE.--Water-stage recorder equipped with remote indicator in power house. Datum of gage is at mean sea level (levels by Bureau of Reclamation). During construction and prior to May 1, 1953, various types of non-recording gages were used.

REMARKS.--Reservoir and flow completely controlled by concrete arch-gravity dam; construction began in 1948; completed in 1952. Storage began Sept. 21, 1951. Usable capacity, 3,451,000 acre-ft (4.26 km³), top of 1.0 ft (0.30 m) flashboards; 3,428,000 acre-ft (4.23 km³) between elevations 3,196 ft (974.1 m), lowest outlet, and 3,560 ft (1,085.1 m), controlled spillway elevation. Dead storage, 40,140 acre-ft (49.5 hm³) below elevation 3,196 ft (974.1 m). Minimum operating level, 445,900 acre-ft (550 hm³), elevation, 3,336 ft (1,016.8 m) for on-site power generation. Water is used for power production, flood control, irrigation and recreation. Controlled spillway is an adjustable ring gate with 1.0 ft (0.3 m) flashboards. Figures given herein represent usable contents.

COOPERATION.--Capacity table and daily elevations furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 3,461,000 acre-ft (4.27 km³) July 3, 4, 1955, Aug. 6, 1956; maximum elevation observed, 3,561.40 ft (1,085.515 m) July 3, 4, 1955; minimum contents observed since normal low operating level reached in May 1952, 607,700 acre-ft (749 hm³) Jan. 13, 1953 (elevation, 3,362.50 ft or 1,024.890 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 3,452,000 acre-ft (4.26 km³) July 8, 9, 10, 25, Aug. 29, Sept. 22, 28 (elevation, 3,561.00 ft or 1,085.393 m); minimum observed, 2,031,000 acre-ft (2.50 km³) Apr. 30 (elevation, 3,490.80 ft or 1,063.996 m).

Capacity table (elevation, in feet, and contents, in acre-ft)

3,480	1,859,000	3,520	2,560,000
3,500	2,186,000	3,540	2,974,000
		3,565	3,548,000

ELEVATION, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
INSTANTANEOUS OBSERVATIONS AT 2359

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3555.99	3550.00	3540.60	3539.07	3529.82	3520.06	3502.65	3491.28	3539.40	3558.06	3560.78	3560.42
2	3555.87	3550.00	3540.90	3538.97	3529.06	3519.62	3502.18	3492.01	3540.31	3558.78	3560.75	3560.43
3	3555.80	3550.04	3541.25	3538.55	3528.40	3518.97	3502.28	3492.85	3541.09	3559.20	3560.54	3560.48
4	3555.77	3550.21	3541.42	3537.90	3527.58	3518.20	3502.38	3493.73	3541.65	3559.64	3560.55	3560.53
5	3555.70	3550.38	3541.65	3537.19	3526.73	3517.22	3501.70	3495.13	3542.60	3560.04	3560.64	3560.60
6	3555.38	3550.50	3541.92	3537.08	3525.88	3516.32	3501.28	3496.42	3543.46	3560.41	3560.63	3560.66
7	3555.10	3550.30	3542.23	3536.93	3525.29	3515.30	3501.13	3497.84	3544.47	3560.77	3560.67	3560.73
8	3554.80	3549.86	3542.48	3536.56	3525.17	3514.30	3501.00	3499.54	3545.51	3561.00	3560.80	3560.67
9	3554.62	3549.38	3542.72	3536.04	3524.36	3513.28	3500.62	3501.77	3547.00	3561.00	3560.85	3560.63
10	3554.57	3548.94	3542.46	3535.38	3523.52	3512.30	3500.29	3504.30	3548.42	3561.00	3560.87	3560.67
11	3554.52	3548.44	3542.00	3534.82	3522.80	3511.27	3500.14	3507.41	3549.75	3560.86	3560.78	3560.72
12	3554.46	3547.93	3541.72	3534.30	3522.57	3510.55	3500.25	3509.65	3550.82	3560.88	3560.75	3560.79
13	3554.15	3547.51	3541.14	3533.58	3522.66	3510.55	3500.46	3511.60	3551.66	3560.92	3560.67	3560.75
14	3553.92	3547.12	3540.54	3533.00	3522.74	3510.53	3500.50	3514.24	3552.33	3560.83	3560.73	3560.75
15	3553.56	3547.22	3540.08	3532.67	3522.79	3510.25	3500.39	3516.60	3552.84	3560.67	3560.80	3560.77
16	3553.27	3547.18	3540.05	3532.76	3522.90	3510.10	3500.09	3518.48	3553.38	3560.50	3560.85	3560.79
17	3553.21	3546.69	3539.91	3532.87	3522.42	3509.08	3499.65	3520.06	3554.00	3560.57	3560.81	3560.84
18	3553.17	3546.50	3539.52	3533.00	3522.00	3509.62	3499.15	3521.65	3554.58	3560.81	3560.89	3560.90
19	3553.15	3545.92	3539.10	3533.13	3521.70	3509.17	3498.57	3523.03	3555.01	3560.76	3560.93	3560.92
20	3552.85	3545.22	3538.75	3533.08	3521.68	3508.95	3497.98	3524.45	3555.58	3560.69	3560.98	3560.95
21	3552.57	3544.53	3538.38	3532.60	3521.73	3509.00	3497.31	3525.55	3556.24	3560.59	3560.89	3560.98
22	3552.30	3543.87	3538.20	3532.32	3521.60	3508.57	3496.60	3526.66	3556.78	3560.55	3560.96	3561.00
23	3552.07	3543.24	3538.08	3532.27	3521.45	3507.92	3495.85	3527.87	3557.26	3560.65	3560.94	3560.97
24	3551.95	3542.68	3538.25	3532.28	3521.10	3507.25	3495.12	3529.46	3557.59	3560.86	3560.86	3560.91
25	3551.70	3542.31	3538.36	3531.80	3520.92	3506.64	3494.44	3531.12	3557.75	3561.00	3560.82	3560.95
26	3551.60	3541.86	3538.51	3531.06	3520.65	3506.00	3493.67	3532.49	3557.84	3560.79	3560.80	3560.97
27	3551.31	3541.61	3538.62	3530.75	3520.36	3505.42	3493.00	3533.61	3557.49	3560.73	3560.87	3560.98
28	3551.00	3541.33	3538.72	3530.83	3520.46	3505.04	3492.21	3535.20	3557.42	3560.60	3560.96	3561.00
29	3550.67	3541.00	3538.81	3530.80	3520.50	3504.32	3491.46	3536.38	3557.50	3560.54	3561.00	3560.95
30	3550.40	3540.65	3538.92	3530.61	---	3503.96	3490.80	3537.41	3557.62	3560.52	3560.87	3560.92
31	3550.03	---	3539.03	3530.30	---	3503.35	---	3538.45	---	3560.62	3560.59	---
MAX	3,559.99	3,550.50	3,543.72	3,539.07	3,529.82	3,520.06	3,502.65	3,538.45	3,557.75	3,561.00	3,561.00	3,561.00
MIN	3,550.03	3,540.65	3,528.08	3,530.30	3,520.36	3,503.35	3,490.80	3,491.28	3,539.40	3,558.06	3,560.54	3,560.42
(†)	3,197	2,988	2,953	2,768	2,570	2,245	2,031	2,940	3,372	3,443	3,442	3,450
(††)	-148,000	-209,000	-35,000	-185,000	-198,000	-325,000	-214,000	+909,000	+432,000	+71,000	-1,000	+8,000

CAL YR 1975 . . . . . (††) +791,000
WTR YR 1976 . . . . . (††) +105,000

† Contents, in thousands of acre-feet, at end of month.
†† Change in contents, in acre-feet.

12362500 SOUTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT

LOCATION.--Lat 48°21'24", long 114°02'12", in SW¼SE¼SW¼ sec.16, T.30 N., R.19 W., Flathead County, Hydrologic Unit 17010209, on right bank 1.7 mi (2.7 km) downstream from Hungry Horse Dam, 3.5 mi (5.6 km) upstream from mouth, and 6.8 mi (10.9 km) east of Columbia Falls and at mile 152.2 (244.9 km).

DRAINAGE AREA.--1,663 mi² (4,307 km²).

PERIOD OF RECORD.--September 1910 to January 1911 (discharge measurements only), February 1911 to September 1913 (no winter records), October 1913 to August 1916 (scattered daily discharge only), water years 1917-22 (annual maximum), April 1923 to November 1924 (no winter records), July to October 1925, May to November 1927, May 1928 to current year. Monthly discharge only for some periods, published in WSP 1316.

REVISED RECORDS.--WSP 1216: Drainage area. WSP 1316: 1923-24(M), 1926-27(M), 1932(M), 1935-36(M). WSP 1636: 1958 (adjusted runoff).

GAGE.--Water-stage recorder. Datum of gage is 3,040 ft (926.592 m) above mean sea level (levels by Bureau of Reclamation). September 1910 to Setpember 1916, nonrecording gage, and Apr. 23, 1923, to Sept, 30, 1928, water-stage recorder at site 3 mi (5 km) downstream at different datum. Oct. 1, 1928, to Sept. 30, 1952 water-stage recorder at site 1.5 mi (2.4 km) downstream at different datum.

REMARKS.--Records excellent. Flow regulated by Hungry Horse Reservoir since Sept. 21, 1951 (see preceding page).

AVERAGE DISCHARGE.--48 years, 3,603 ft³/s (102.0 m³/s), 29.42 in/yr (747 mm/yr), 2,610,000 acre-ft/yr (3.22 km³/yr), adjusted for change in contents in Hungry Horse Reservoir since Oct. 1, 1951.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 46,200 ft³/s (1,310 m³/s) June 19, 1916, gage height, 16.6 ft (5.06 m), site and datum then in use, from rating curve extended above 20,000 ft³/s (566 m³/s); minimum observed, 7.3 ft³/s (0.21 m³/s) Sept. 24, 1951, gage height, 0.52 ft (0.158 m), dam closure, site and datum then in use; minimum daily, 7.3 ft³/s (0.21 m³/s) Sept. 24, 1951.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,500 ft³/s (326 m³/s) Mar. 6, gage height, 10.96 ft (3.341 m); minimum daily, 162 ft³/s (4.59 m³/s) Sept. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6260	2070	3400	419	5650	4910	7620	1350	3050	5920	218	3110
2	2040	2070	2040	2060	9390	5090	5620	1310	2900	460	3130	802
3	2040	3100	416	5850	7930	7320	391	2990	2950	2850	3280	316
4	2040	2100	5330	9250	9220	8540	387	4120	2950	2810	2210	164
5	2030	2070	2820	8840	9460	10100	7290	906	2720	2860	496	168
6	5090	2090	1030	2360	9450	10300	6600	1590	2850	2790	1460	460
7	5260	5800	417	3500	7090	10300	5220	461	2990	3500	1710	178
8	5300	8200	1030	5720	2670	10400	6200	468	2910	4790	233	1460
9	3300	8200	423	6770	9460	10400	10100	492	2960	6750	1520	1290
10	2050	7950	6120	9330	9460	10500	10000	646	2920	6840	1600	324
11	2050	8120	8840	6840	9450	10400	10100	411	2680	6830	2720	162
12	2050	7950	6340	6720	4350	8060	10100	284	2920	6810	1740	171
13	5280	6950	9020	9070	417	778	10100	348	2770	5690	2320	1120
14	3650	6700	9180	7940	789	962	10100	465	2880	6720	880	733
15	6150	2060	7990	5020	729	3260	10100	472	3060	6760	660	522
16	4950	2060	2240	419	413	2490	10100	478	2850	6580	1550	495
17	2050	5220	3660	420	6450	3930	10100	2930	2910	3260	2090	167
18	2050	6130	6220	421	5000	3050	10100	2980	2880	797	477	165
19	2050	7860	6280	420	3890	5500	10100	2860	4800	4460	848	163
20	5090	9160	5270	2260	1300	3130	10100	2930	4840	4450	2030	163
21	5150	9170	5360	6340	399	723	10100	3030	4350	4380	2680	331
22	5630	9160	3620	4820	2670	5120	10200	3070	5120	3720	480	408
23	4300	9170	3150	2130	2260	7470	10300	3060	6920	1680	2410	1050
24	2970	9110	422	1570	4340	7460	10200	2950	6870	235	1980	1210
25	5180	6250	420	6010	3140	6880	10200	2970	7570	830	2010	421
26	2090	6240	414	9270	3660	7500	10300	2920	9030	5170	1840	392
27	5100	4570	407	4830	3730	6460	10300	2940	8950	2990	363	392
28	5140	4400	408	407	397	4330	10300	2930	7750	3830	188	404
29	5130	4410	399	2010	411	7550	10300	2980	6920	2750	796	1220
30	5380	4710	406	3340	---	4580	10100	2840	8040	2330	2650	931
31	5880	---	404	4250	---	6190	---	2870	---	579	4620	---
TOTAL	122950	173050	103476	138606	133775	193703	262728	61051	133310	120421	51189	18892
MEAN	3966	5766	3338	4471	4613	6248	8758	1969	4444	3885	1651	630
MAX	6260	9170	9180	9330	9460	10500	10300	4120	9030	6840	4620	3110
MIN	2030	2060	399	407	397	723	387	284	2680	235	188	162
AC-FT	243900	343200	205200	274900	265300	384200	521100	121100	264400	238900	101500	37470
MEAN†	1560	2255	2768	1462	1170	963	5161	16750	11700	5040	1634	764
CFSM†	0.94	1.36	1.66	0.88	0.70	0.58	3.10	10.10	7.04	3.03	0.98	0.46
IN†	1.08	1.51	1.92	1.01	0.76	0.67	3.46	11.61	7.85	3.49	1.13	0.51
AC-FT†	95900	134200	170200	89900	67300	59200	307100	1030100	696400	309900	100500	45470

OBSERVED

CAL YR 1975	TOTAL	1143159	MEAN	3132	MAX	10600	MIN	158	AC-FT	2268000
WTR YR 1976	TOTAL	1513151	MEAN	4134	MAX	10500	MIN	162	AC-FT	3001000

ADJUSTED

CAL YR 1975	TOTAL	1541971	MEAN	4225	CFSM	2.54	IN	34.48	AC-FT	3058000
WTR YR 1976	TOTAL	1566005	MEAN	4279	CFSM	2.57	IN	35.02	Ac-Ft	3106000

† Adjusted for change in contents in Hungry Horse Reservoir.

12363000 FLATHEAD RIVER AT COLUMBIA FALLS, MT

LOCATION.--Lat 48°21'43", long 114°11'02", in NW¼NW¼SE¼ sec.17, T.30 N., R.20 W., Flathead County, Hydrologic Unit 17010208, on right bank 200 ft (61 m) downstream from county road bridge at Columbia Falls, 5.7 mi (9.2 km) downstream from South Fork, and at mile 143.0 (230.1 km).
DRAINAGE AREA.--4,464 mi^2 (11,562 km^2).
PERIOD OF RECORD.--May 1922 to September 1923 (fragmentary), June 1928 to current year. Monthly discharge only for some periods, published in WSP 1316.
REVISED RECORDS.--WSP 1092: 1923. WSP 1216: Drainage area. WSP 1636: 1958 (adjusted runoff).
GAGE.--Water-stage recorder. Datum of gage is 2,977.67 ft (907.594 m) above mean sea level (levels by Corps of Engineers). Prior to Nov. 12, 1928, nonrecording gage on bridge 200 ft (61 m) upstream at datum 0.19 ft (0.058 m) higher.
REMARKS.--Records excellent. South Fork Flathead River, which contributes about one-third of flow, completely regulated by Hungry Horse Reservoir 10.9 mi (17.5 km) upstream since Sept. 21, 1951 (see p. 694).
AVERAGE DISCHARGE.--48 years, 9,866 ft^3/s (279.4 m^3/s), 30.01 in/yr (762 mm/yr), 7,148,000 acre-ft/yr (8.81 km^3/yr), adjusted for change in contents in Hungry Horse Reservoir since Oct. 1, 1951.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 176,000 ft^3/s (4,980 m^3/s) June 9, 1964, gage height, 25.58 ft (7.797 m), from floodmarks, from rating curve extended above 75,000 ft^3/s (2,120 m^3/s) on basis of slope-area measurement of peak flow; minimum, 798 ft^3/s (22.6 m^3/s) Dec. 8, 1929, gage height, -0.08 ft (-0.024 m).
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1894 reached a stage of 22.7 ft (6.92 m), from floodmarks, discharge, 142,000 ft^3/s (4,020 m^3/s), from rating curve extended above 75,000 ft^3/s (2,120 m^3/s) on basis of slope-area measurement of peak flow in 1964.
EXTREMES FOR CURRENT YEAR.--Maximum discharge, 46,400 ft^3/s (1,310 m^3/s) May 11, gage height, 12.98 ft (3.956 m); minimum daily, 1,710 ft^3/s (48.4 m^3/s) Feb.29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7950	5110	5340	2770	6980	5490	9030	9460	23300	24900	6150	7570
2	4090	4760	5370	4150	11300	5890	7720	12000	22100	17400	8470	5390
3	3730	6660	6520	6930	10100	8220	1940	18200	20500	17500	8660	3920
4	4170	7470	14700	11400	10300	9460	1980	23700	18900	17100	8050	3550
5	4660	8380	15600	11300	10700	11300	8270	21700	17400	17300	6050	3440
6	7270	8410	10200	5470	10800	11700	9670	23400	17300	17200	6520	3420
7	8030	11200	8000	5220	9490	11800	8000	23000	19000	17600	7270	3820
8	8300	13400	7700	6980	3500	11800	11100	26300	19600	19400	6120	4600
9	6430	12900	6810	8750	11300	11800	17400	32300	23600	21700	8050	4520
10	4930	12300	12400	11400	11200	11900	19300	37100	26900	20400	10100	3340
11	4890	12100	15900	9030	11200	11900	21800	43000	26100	19200	10600	2970
12	4890	11700	12700	8610	7030	9640	24400	40100	23900	19100	9200	2910
13	7640	10500	14500	11100	2210	2470	26900	32000	22100	19700	8550	3790
14	6520	10500	13800	10000	2600	2460	26300	35600	20200	19500	6810	3350
15	8550	5690	12900	7750	2490	3980	24100	35300	18300	18200	6860	3100
16	7640	5920	7320	2570	2120	4250	22000	29300	17500	17300	7670	2940
17	4700	8440	7470	2650	7370	4600	20500	30200	18600	13700	8800	2550
18	4560	9400	9640	2770	7100	4420	19300	30100	19000	10600	6830	2510
19	4580	10600	10300	2860	5560	7030	18500	28200	21000	13600	6400	2460
20	7520	11600	9090	4580	3210	4740	18000	28400	23300	13600	7640	2390
21	7820	11600	8860	7920	1960	2750	17700	28400	23600	13400	9000	2460
22	8270	11700	6930	7220	4150	5800	17200	25500	23700	12400	6520	2530
23	7150	11900	6930	4320	3660	8860	16800	25800	24800	9960	7320	3070
24	5640	12000	3580	3800	5450	8860	16500	28900	24500	7820	7970	3370
25	7470	8970	3470	7270	4870	8270	17000	31800	23800	7870	7120	2640
26	4840	8800	3370	11300	4760	8860	17100	29000	24100	12500	6980	2450
27	7150	7570	3370	7640	5600	7820	17000	25100	22300	9670	5560	2390
28	7420	6550	3210	2620	2130	5710	16800	27500	20300	10100	4990	2350
29	7350	6330	3050	4070	1710	8830	16700	29300	20000	9380	4990	3110
30	7540	6240	3050	5110	---	6620	16900	25200	23500	8470	7000	2880
31	8300	---	3020	6500	---	6860	---	23700	---	6360	7320	---
TOTAL	200000	278700	255100	204060	180850	234090	485910	859560	649200	462930	229570	99790
MEAN	6452	9290	8229	6583	6236	7551	16200	27730	21640	14930	7405	3326
MAX	8550	13400	15900	11400	11300	11900	26900	43000	26900	24900	10600	7570
MIN	3730	4760	3020	2570	1710	2460	1940	9460	17300	6360	4990	2350
AC-FT	396700	552800	506000	404800	358700	464300	963800	1705000	1288000	918200	455400	197900
MEAN†	4045	5778	7660	3575	2794	2265	12600	42510	28910	16090	7390	3460
CFSM†	0.91	1.29	1.72	0.80	0.63	0.51	2.82	9.52	6.48	3.60	1.66	0.78
IN†	1.04	1.44	1.98	0.92	0.67	0.59	3.15	10.98	7.22	4.15	1.91	0.86
AC-FT†	248700	343800	471000	219800	160700	139300	749800	2614000	1720000	989200	454400	205900

OBSERVED

CAL YR 1975	TOTAL	3836400	MEAN	10510	MAX	70700	MIN	1060	AC-FT	7610000
WTR YR 1976	TOTAL	4139800	MEAN	11310	MAX	43000	MIN	1710	AC-FT	8212000

ADJUSTED

CAL YR 1975	TOTAL	4235341	MEAN	11600	CFSM	2.60	IN	35.29	AC-FT	8401000
WTR YR 1976	TOTAL	4192889	MEAN	11460	CFSM	2.57	IN	34.93	AC-FT	8317000

† Adjusted for change in contents in Hungry Horse Reservoir.

12363920 STILLWATER RIVER AT OLNEY, MT

LOCATION.--Lat 48°32'08", long 114°34'15", in SE¼NE¼SE¼ sec.18, T.32 N., R.23 W., Flathead County, Hydrologic Unit 17010210, on downstream side of bridge near right bank, 0.3 mi (0.5 km) upstream from Lower Stillwater Lake, 0.9 mi (1.4 km) southeast of Olney, and at mile 37.7 (60.7 km).

DRAINAGE AREA.--146 mi^2 (378 km^2).

PERIOD OF RECORD.--October 1972 to current year.

REMARKS.--Records fair except those for winter period, which are poor.

GAGE.--Nonrecording gage and crest-stage gage. Datum of gage is 3,050.90 ft (929.914 m) above mean sea level.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 1,740 ft^3/s (49.3 m^3/s) June 18, 1974, gage height, 4.42 ft (1.347 m); maximum gage height observed, 5.72 ft (1.743 m) Jan. 9, 1973 (backwater from ice); minimum daily discharge, 25 ft^3/s (0.71 m^3/s) Dec. 8, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum discharge observed, 935 ft^3/s (26.5 m^3/s) May 13, gage height, 3.45 ft (1.052 m); minimum daily, 42 ft^3/s (1.19 m^3/s) Mar. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	71	60	68	62	50	69	250	440	308	143	117
2	57	71	68	56	60	45	72	250	440	299	148	115
3	59	74	71	54	56	42	75	250	458	290	140	104
4	63	77	95	54	54	43	81	391	440	270	138	104
5	63	81	104	56	50	44	87	413	440	258	138	106
6	65	82	104	58	48	46	108	565	396	258	138	102
7	72	84	106	60	50	47	138	470	365	254	140	99
8	75	81	106	60	52	49	145	565	365	258	148	95
9	75	84	102	60	52	51	250	682	391	254	148	93
10	77	84	102	62	54	49	258	695	435	250	153	93
11	75	81	100	62	54	51	262	708	559	239	148	87
12	74	79	102	62	56	51	345	879	505	243	148	86
13	74	77	90	64	60	52	424	935	578	236	148	84
14	72	74	80	64	75	52	470	865	464	243	145	82
15	71	74	76	64	69	49	476	728	458	236	148	82
16	69	72	74	66	68	51	429	708	407	243	150	77
17	69	74	74	66	68	51	355	695	413	246	158	77
18	68	72	72	68	66	53	360	676	413	246	158	75
19	68	69	70	72	66	56	340	663	413	236	163	74
20	66	65	70	64	60	60	322	663	402	221	161	72
21	66	62	72	60	65	57	299	617	396	211	155	72
22	66	60	72	60	60	57	258	513	407	199	143	72
23	68	59	74	62	59	57	254	513	418	198	143	71
24	65	62	75	62	60	62	250	565	391	195	143	69
25	68	60	75	62	56	60	246	565	375	175	153	69
26	69	65	77	60	57	59	243	695	375	161	143	69
27	69	62	72	60	60	57	250	604	365	158	138	68
28	69	62	75	62	57	57	243	470	370	150	138	66
29	68	60	75	62	56	56	236	470	350	148	130	66
30	69	56	81	64	---	59	250	470	331	145	130	63
31	69	---	75	64	---	62	---	482	---	145	128	---
TOTAL	2117	2134	2549	1918	1710	1635	7595	18015	12660	6973	4505	2509
MEAN	68.3	71.1	82.2	61.9	59.0	52.7	253	581	422	225	145	83.6
MAX	77	84	106	72	75	62	476	935	578	308	163	117
MIN	57	56	60	54	48	42	69	250	331	145	128	63
CFSM	.47	.49	.56	.42	.40	.36	1.73	3.98	2.89	1.54	.99	.57
IN.	.54	.54	.65	.49	.44	.42	1.94	4.59	3.23	1.78	1.15	.64
AC-FT	4200	4230	5060	3800	3390	3240	15060	35730	25110	13830	8940	4980

CAL YR 1975 TOTAL 56505 MEAN 155 MAX 702 MIN 35 CFSM 1.06 IN 14.40 AC-FT 112100
WTR YR 1976 TOTAL 64320 MEAN 176 MAX 935 MIN 42 CFSM 1.21 IN 16.39 AC-FT 127600

12365000 STILLWATER RIVER NEAR WHITEFISH, MT

LOCATION.--Lat 48°19'08", long 114°23'11", in NE¼SW¼ sec.34, T.30 N., R.22 W., Flathead County, Hydrologic Unit 17010210, on right bank 600 ft (180 m) downstream from road bridge, 6.2 mi (10.0 km) southwest of Whitefish, 10.6 mi (17.1 km) upstream from Whitefish River, and 13.6 mi (21.9 km) upstream from mouth.

DRAINAGE AREA.--524 mi^2 (1,357 km^2).

PERIOD OF RECORD.--October and November 1930 (monthly discharge only, published in WSP 1316), December 1930 to September 1950, October 1972 to current year.

REVISED RECORDS.--WSP 1736: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,953.26 ft (900.154 m) above mean sea level.

REMARKS.--Records good except those for winter period, which are poor. Diversions for irrigation of about 200 acres (809,000 m^2) above station.

AVERAGE DISCHARGE.--24 years (1930-50, 1972-76), 344 ft^3/s (9.742 m^3/s), 8.92 in/yr (227 mm/yr), 249,200 acre-ft/yr (307 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,330 ft^3/s (123 m^3/s) May 26, 1948, gage height, 20.90 ft (6.370 m), from floodmark; minimum daily, 40 ft^3/s (1.13 m^3/s) Dec. 24, 1944.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,330 ft^3/s (66.0 m^3/s) May 15, gage height, 14.60 ft (4.450 m); minimum daily, 82 ft^3/s (2.32 m^3/s) Mar. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	106	133	121	110	125	100	223	686	1140	557	272	218
2	104	136	115	100	120	94	232	739	1110	537	269	211
3	102	139	110	110	115	90	238	830	1070	526	270	203
4	105	147	110	120	110	82	253	974	1020	518	285	195
5	110	157	115	130	100	84	255	1130	968	508	269	189
6	117	159	110	140	105	86	267	1270	914	490	269	184
7	127	160	105	130	110	88	280	1390	860	475	269	181
8	145	163	110	140	115	90	312	1490	826	464	269	177
9	159	162	115	140	115	92	365	1580	797	460	269	174
10	158	161	120	150	120	96	454	1690	781	403	272	171
11	157	157	130	140	115	94	584	1820	776	456	272	169
12	156	152	140	150	120	90	728	1980	785	450	269	167
13	154	151	145	150	115	92	918	2170	788	456	269	166
14	150	142	150	150	120	96	1100	2290	785	449	260	163
15	146	143	145	150	120	100	1230	2320	773	430	260	162
16	142	145	140	160	120	105	1300	2280	757	414	268	158
17	138	147	150	150	120	105	1290	2180	749	395	285	155
18	136	143	160	140	115	110	1220	2050	754	377	291	154
19	134	129	170	130	115	110	1100	1910	749	362	288	151
20	131	135	170	130	110	115	982	1770	739	348	286	149
21	132	151	170	125	105	120	896	1640	731	338	280	146
22	134	149	160	130	100	125	830	1550	724	326	273	144
23	131	138	160	140	105	130	773	1470	719	315	268	142
24	131	134	160	130	110	135	730	1410	713	309	267	140
25	130	135	150	120	115	140	706	1360	698	317	261	138
26	131	132	150	130	110	145	700	1350	689	316	253	136
27	133	130	150	140	110	150	691	1340	673	301	251	134
28	133	123	150	140	105	155	680	1320	646	284	246	132
29	132	123	140	140	105	160	671	1270	616	272	243	130
30	131	122	130	140	---	170	668	1210	584	269	234	128
31	131	---	120	130	---	193	---	1170	---	275	225	---
TOTAL	4126	4298	4271	4185	3270	3542	20676	47639	23934	12457	8262	4867
MEAN	133	143	138	135	113	114	689	1537	798	402	267	162
MAX	159	163	170	160	125	193	1300	2320	1140	557	291	218
MIN	102	122	105	100	100	82	223	686	584	269	225	128
CFSM	.25	.27	.26	.26	.22	.22	1.31	2.93	1.52	.77	.51	.31
IN.	.29	.31	.30	.30	.23	.25	1.47	3.38	1.70	.88	.59	.35
AC-FT	8180	8530	8470	8300	6490	7030	41010	94490	47470	24710	16390	9650

CAL YR 1975 TOTAL 119121 MEAN 326 MAX 1930 MIN 62 CFSM .62 IN 8.46 AC-FT 236300
WTR YR 1976 TOTAL 141527 MEAN 387 MAX 2320 MIN 82 CFSM .74 IN 10.05 AC-FT 280700

12365800 SWIFT CREEK NEAR WHITEFISH, MT

LOCATION.--Lat 48°28'59", long 114°25'52", in NE¼SE¼NW¼ sec.5, T.31 N., R.22 W., Flathead County, Hydrologic Unit 17010210, on left bank 150 ft (46 m) downstream from farm road bridge, 0.2 mi (0.3 km) downstream from road bridge, 0.5 mi (0.8 km) upstream from Whitefish Lake, and 7.0 mi (11.3 km) northwest of Whitefish.

DRAINAGE AREA.--78.0 mi^2 (202 km^2).

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,003.03 ft (915.324 m) above mean sea level (levels by Soil Conservation Service).

REMARKS.--Records fair except those for winter period, which are poor. No gage-height record Nov. 26 to Dec. 1, Dec. 4 to Jan. 21.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,980 ft^3/s (56.1 m^3/s) June 18, 1974, gage height, 6.70 ft (2.042 m); minimum, 0.65 ft^3/s (0.018 m^3/s) Dec. 3, 1972, gage height, 1.11 ft (0.338 m), result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,270 ft^3/s (36.0 m^3/s) May 11, gage height, 6.48 ft (1.975 m); minimum daily, 7.0 ft^3/s (0.198 m^3/s) Feb. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	64	50	30	32	25	39	282	530	310	112	72
2	50	64	54	25	32	15	37	380	516	299	108	70
3	50	69	58	26	25	10	37	480	480	292	104	70
4	54	72	60	27	20	9.0	40	530	436	296	100	69
5	56	70	55	28	10	12	45	580	396	261	108	69
6	53	72	50	28	7.0	20	50	640	384	252	98	72
7	61	70	52	27	15	25	77	676	376	237	106	70
8	57	70	54	27	20	28	125	820	384	246	110	67
9	53	72	56	27	22	30	195	952	432	249	125	66
10	51	70	56	28	24	30	225	1020	490	222	116	64
11	51	70	52	28	26	28	276	1190	485	207	106	63
12	50	69	48	27	27	25	328	1070	475	225	96	63
13	49	67	46	26	28	26	400	880	450	231	92	63
14	49	67	44	25	29	27	352	874	420	204	98	58
15	49	69	42	26	30	27	313	802	388	190	120	56
16	48	70	40	27	31	28	273	754	376	178	153	54
17	48	69	38	28	32	28	237	760	364	168	140	56
18	46	66	38	30	32	29	207	712	352	153	112	54
19	46	62	39	28	32	30	190	688	380	148	106	53
20	50	58	39	26	31	31	183	778	364	138	106	51
21	49	56	39	25	30	33	175	736	372	128	106	51
22	51	54	39	25	30	35	160	688	376	128	98	51
23	50	56	39	25	32	35	153	694	408	118	106	51
24	50	58	40	24	35	34	160	778	388	120	98	51
25	51	58	40	24	40	34	178	784	384	125	94	51
26	56	56	41	24	38	33	165	706	372	114	100	50
27	54	54	41	26	36	32	170	646	336	118	94	49
28	54	52	41	28	32	32	180	688	317	120	90	46
29	53	50	41	30	30	31	193	652	303	116	80	44
30	56	45	40	32	---	33	228	595	303	120	75	43
31	64	---	35	32	---	37	---	580	---	114	74	---
TOTAL	1609	1899	1407	839	808.0	852.0	5391	22415	12016	5827	3231	1747
MEAN	51.9	63.3	45.4	27.1	27.9	27.5	180	723	401	188	104	58.2
MAX	64	72	60	32	40	37	400	1190	530	310	153	72
MIN	46	45	35	24	7.0	9.0	37	282	303	114	74	43
CFSM	.67	.81	.58	.35	.36	.35	2.31	9.27	5.14	2.41	1.33	.75
IN.	.77	.91	.67	.40	.39	.41	2.57	10.69	5.73	2.78	1.54	.83
AC-FT	3190	3770	2790	1660	1600	1690	10690	44460	23830	11560	6410	3470

CAL YR 1975 TOTAL 52176.6 MEAN 143 MAX 880 MIN 4.0 CFSM 1.83 IN 24.88 AC-FT 103500
WTR YR 1976 TOTAL 58041.0 MEAN 159 MAX 1190 MIN 7.0 CFSM 2.04 IN 27.68 AC-FT 115100

12366000 WHITEFISH RIVER NEAR KALISPELL, MT

LOCATION.--Lat 48°19'13", long 114°16'39", in SW¼SE¼NW¼ sec.34, T.30 N., R.21 W., Flathead County, Hydrologic Unit 17010210, on right bank 160 ft (49 m) upstream from road bridge, 8.0 mi (12.9 km) north of Kalispell and 8.3 mi (13.4 km) upstream from mouth.

DRAINAGE AREA.--170 mi^2 (440 km^2).

PERIOD OF RECORD.--July to November 1928, April 1929 to September 1950, annual maximum, water year 1964, October 1972 to current year. Prior to 1964, published as Whitefish Creek near Kalispell.

GAGE.--Water-stage recorder. Datum of gage is 2,969.83 ft (905.204 m) above mean sea level. Prior to Oct. 16, 1930, nonrecording gage at site 200 ft (61 m) downstream at datum 10.00 ft (3.048 m) lower. Oct.16, 1930, to Sept. 30, 1950, water-stage recorder on left bank at same datum.

REMARKS.--Records good except those for winter period, which are poor. Some regulation by Whitefish Lake. Diversions for irrigation of about 650 acres (2.6 km^2) above station.

AVERAGE DISCHARGE.--25 years (1929-50, 1972-76), 195 ft^3/s (5.522 m^3/s), 141,300 acre-ft/yr (174 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,580 ft^3/s (44.7 m^3/s) June 24, 1974; gage height, 4.91 ft (1.497 m); minimum, 4.5 ft^3/s (0.13 m^3/s) Oct. 18, 1934, gage height, 0.83 ft (0.253 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 875 ft^3/s (24.8 m^3/s) May 15, gage height, 3.65 ft (1.113 m); minimum, 45 ft^3/s (1.27 m^3/s) Mar. 1, gage height, 1.16 ft (0.354 m), result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	88	90	90	98	110	79	113	370	776	454	200	161
2	86	90	96	96	100	76	120	390	768	436	194	155
3	86	90	110	98	96	74	120	420	752	422	191	153
4	88	90	118	100	90	70	133	440	732	412	206	150
5	86	92	113	105	80	72	140	482	704	401	194	146
6	86	95	108	105	80	74	148	528	676	391	191	143
7	97	95	110	100	82	76	155	556	652	380	194	142
8	101	95	110	105	84	76	155	588	636	377	188	140
9	97	95	115	105	86	77	173	648	624	377	191	138
10	95	95	118	110	86	75	179	700	628	370	191	133
11	95	95	118	110	86	71	203	768	620	359	191	130
12	95	95	115	105	87	68	236	825	616	366	188	130
13	95	95	115	105	88	70	279	845	604	391	185	128
14	92	95	110	110	88	66	310	865	600	370	179	126
15	92	95	110	115	88	66	331	875	568	352	185	123
16	92	95	105	120	90	68	338	870	568	335	191	120
17	90	95	110	120	90	70	360	865	564	317	200	118
18	90	95	112	115	92	73	370	860	552	300	194	113
19	88	92	110	115	90	75	380	855	544	286	191	110
20	88	90	110	115	88	75	370	860	540	272	185	110
21	88	88	105	115	86	75	360	865	536	272	185	110
22	90	86	105	110	85	75	350	850	532	263	179	110
23	88	88	105	110	84	75	330	835	544	254	185	108
24	88	90	110	105	84	77	320	835	540	248	197	105
25	86	92	108	105	84	77	310	835	532	251	188	105
26	88	95	103	110	84	77	300	835	528	239	185	103
27	88	92	105	110	82	77	300	820	513	227	179	101
28	88	90	103	115	82	79	310	815	492	221	173	101
29	88	88	103	115	82	79	330	810	476	212	170	99
30	88	86	105	120	---	82	350	800	461	209	167	97
31	88	---	100	120	---	95	---	792	---	206	164	---
TOTAL	2795	2764	3355	3387	2534	2319	7873	22702	17877	9970	5801	3707
MEAN	90.2	92.1	108	109	87.4	74.8	262	732	596	322	187	124
MAX	101	95	118	120	110	95	380	875	776	454	206	161
MIN	86	86	90	96	80	66	113	370	461	206	164	97
AC-FT	5540	5480	6650	6720	5030	4600	15620	45030	35460	19780	11510	7350

CAL YR 1975 TOTAL 71919 MEAN 197 MAX 860 MIN 40 AC-FT 142700
WTR YR 1976 TOTAL 85084 MEAN 232 MAX 875 MIN 66 AC-FT 168800

12369200 SWAN RIVER NEAR CONDON, MT

LOCATION.--Lat 47°25'21", long 113°40'12", near center of NW¼ sec.8, T.19 N., R.16 W., Missoula County, Hydrologic Unit 17010211, Flathead National Forest, on right bank 25 ft (8 m) downstream from road bridge, 0.5 mi (0.8 km) downstream from Beaver Creek, 4.0 mi (6.4 km) downstream from Lindberg Lake, 8.1 mi (13.0 km) southeast of Condon, and at mile 66.5 (107.0 km).

DRAINAGE AREA.--73.3 mi^2 (189.8 km^2).

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,015 ft (1,224 m) by barometer.

REMARKS.--Records good except those for winter period, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,540 ft^3/s (43.6 m^3/s) June 18, 1974, gage height, 4.88 ft (1.487 m); minimum daily, 22 ft^3/s (0.62 m^3/s) Dec. 8, 1972; minimum gage height, 1.37 ft (0.418 m) Apr. 11, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 994 ft^3/s (28.2 m^3/s) May 15, gage height, 4.19 ft (1.277 m); minimum, 40 ft^3/s (1.13 m^3/s) Mar. 14, gage height, 1.49 ft (0.454 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63	85	78	74	62	48	69	178	460	350	198	104
2	61	90	104	70	60	46	69	223	436	305	193	98
3	60	116	153	71	58	47	70	293	400	368	185	92
4	66	135	173	72	55	48	75	368	371	368	185	87
5	67	140	188	73	50	49	88	396	362	368	180	83
6	64	140	170	73	51	50	112	374	368	374	178	85
7	83	138	163	69	52	51	155	377	384	400	173	87
8	108	130	163	67	53	52	220	428	400	432	168	85
9	108	122	158	67	54	53	290	528	472	472	163	82
10	106	116	155	66	55	53	323	628	544	464	170	78
11	102	110	148	66	56	54	380	820	628	432	170	75
12	106	104	143	66	57	55	452	724	610	432	165	73
13	112	96	128	66	57	50	504	616	544	464	158	70
14	112	88	122	68	57	48	476	868	472	460	150	67
15	110	88	126	75	57	46	432	922	404	416	148	63
16	110	88	122	83	58	45	368	790	388	371	148	60
17	106	85	115	83	60	46	323	724	440	347	145	60
18	102	78	110	83	58	53	281	664	452	326	143	57
19	98	70	100	83	57	55	254	576	432	314	140	55
20	100	69	95	82	56	55	233	556	436	302	145	54
21	106	67	90	81	54	55	215	524	452	353	155	53
22	112	64	85	80	52	55	200	504	468	371	153	52
23	110	67	83	78	50	58	188	504	500	356	153	55
24	106	83	78	75	49	59	178	548	492	329	150	58
25	100	90	76	74	49	60	193	610	436	308	145	57
26	102	90	76	73	53	60	185	580	377	290	140	54
27	98	87	80	72	53	60	175	544	332	269	133	52
28	92	82	75	70	52	60	165	556	302	251	128	50
29	87	76	76	69	50	60	160	532	293	230	124	49
30	85	75	78	66	---	60	160	488	311	218	118	48
31	88	---	76	64	---	64	---	472	---	205	110	---
TOTAL	2930	2869	3587	2259	1585	1655	6993	16915	12966	11005	4814	2043
MEAN	94.5	95.6	116	72.9	54.7	53.4	233	546	432	355	155	68.1
MAX	112	140	188	83	62	64	504	922	628	472	198	104
MIN	60	64	75	64	49	45	69	178	293	205	110	48
CFSM	1.29	1.30	1.58	.99	.75	.73	3.18	7.45	5.89	4.84	2.11	.93
IN.	1.49	1.46	1.82	1.15	.80	.84	3.55	8.58	6.58	5.58	2.44	1.04
AC-FT	5810	5690	7110	4480	3140	3280	13870	33550	25720	21830	9550	4050

CAL YR 1975 TOTAL 70774 MEAN 194 MAX 988 MIN 33 CFSM 2.65 IN 35.92 AC-FT 140400
WTR YR 1976 TOTAL 69621 MEAN 190 MAX 922 MIN 45 CFSM 2.59 IN 35.33 AC-FT 138100

12370000 SWAN RIVER NEAR BIGFORK, MT

LOCATION.--Lat 48°01'28", long 113°58'44", near center of S½SW¼ sec.11, T.26 N., R.19 W., Lake County, Hydrologic Unit 17010211, on left bank 0.2 mi (0.3 km) downstream from Johnson Creek, 0.4 mi (0.6 km) downstream from Swan Lake, 5.1 mi (8.2 km) southeast of Bigfork, and at mile 14.0 (22.5 km).

DRAINAGE AREA.--671 mi^2 (1,738 km^2).

PERIOD OF RECORD.--October 1910 to May 1911 (gage heights only), April 1922 to current year. Monthly discharge only for some periods, published in WSP 1316.

REVISED RECORDS.--WSP 1216: Drainage area. WSP 1246: 1923-24(M), 1930. WSP 1316: 1923.

GAGE.--Water-stage recorder. Datum of gage is 3,062.6 ft (933.48 m) above mean sea level (from river-profile survey). Oct. 10, 1910, to May 22, 1911, nonrecording gage at site 10 mi (16 km) upstream at different datum. Apr. 28, 1922, to Oct. 14, 1930, nonrecording gage at site 800 ft (240 m) upstream at datum 1.9 ft (0.58 m) higher.

REMARKS.--Records excellent. Diversions for irrigation of about 360 acres (1.46 km^2) above station.

AVERAGE DISCHARGE.--54 years, 1,166 ft^3/s (33.02 m^3/s), 23.60 in/yr (599 mm/yr), 844,800 acre-ft/yr (1.04 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,890 ft^3/s (252 m^3/s) June 20, 1974, gage height, 7.34 ft (2.237 m); minimum observed, 193 ft^3/s (5.47 m^3/s) Jan. 26-29, 1930, gage height, 0.04 ft (0.012 m), site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,860 ft^3/s (138 m^3/s) May 16, gage height, 5.45 ft (1.661 m); minimum, 457 ft^3/s (12.9 m^3/s) Feb. 8, gage height, 2.31 ft (0.704 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	566	740	610	687	639	551	692	1230	3230	2300	1160	781
2	560	747	675	625	623	521	734	1260	3120	2460	1120	742
3	553	772	830	604	634	491	754	1360	2900	2400	1090	726
4	571	859	1050	613	626	485	789	1590	2800	2390	1060	711
5	587	914	1280	632	534	493	851	1910	2630	2300	1040	689
6	581	942	1350	659	498	495	961	2200	2530	2310	1010	682
7	613	978	1320	657	490	499	1160	2340	2530	2290	1010	693
8	671	983	1290	665	497	501	1430	2410	2620	2320	998	687
9	710	977	1240	658	520	500	1720	2570	2790	2350	985	683
10	699	959	1220	647	536	503	1970	2940	3120	2350	971	669
11	703	931	1210	645	548	524	2140	3470	3460	2280	960	656
12	699	915	1180	642	565	535	2340	4170	3700	2200	940	640
13	696	883	1140	633	600	526	2630	4450	3660	2340	912	634
14	700	846	1040	630	620	530	2850	4240	3470	2370	882	625
15	705	816	991	622	632	529	2890	4510	3160	2290	872	604
16	708	802	960	636	649	520	2790	4760	2880	2160	901	596
17	705	801	923	664	647	527	2590	4530	2760	2020	916	600
18	697	782	878	687	638	559	2360	4280	2820	1900	906	589
19	695	756	848	709	619	614	2160	4100	2830	1810	898	583
20	704	705	821	715	603	654	2000	3880	2780	1750	887	569
21	713	676	797	696	595	668	1840	3700	2820	1690	904	556
22	759	657	763	686	575	672	1720	3490	2910	1650	901	550
23	818	642	737	683	563	681	1630	3300	3070	1620	903	549
24	836	680	739	697	560	709	1540	3260	3190	1560	910	542
25	821	719	736	710	557	719	1460	3450	3200	1530	895	544
26	791	753	744	706	559	712	1420	3750	3040	1490	895	551
27	782	752	751	684	563	700	1400	3820	2780	1400	885	551
28	772	726	749	681	557	684	1340	3670	2530	1350	872	536
29	756	679	742	673	555	669	1290	3650	2340	1280	847	531
30	731	647	735	660	---	661	1250	3550	2220	1230	822	526
31	725	---	731	656	---	669	---	3400	---	1190	801	---
TOTAL	21627	24039	29080	20562	16802	18101	50701	101240	87950	60750	29153	18594
MEAN	698	801	938	663	579	584	1690	3266	2932	1960	940	620
MAX	836	983	1350	715	649	719	2890	4760	3700	2460	1160	781
MIN	553	642	610	604	490	485	692	1230	2220	1190	801	526
CFSM	1.04	1.19	1.40	.99	.86	.87	2.52	4.87	4.37	2.92	1.40	.92
IN.	1.20	1.33	1.61	1.14	.93	1.00	2.81	5.61	4.88	3.37	1.62	1.03
AC-FT	42900	47680	57680	40780	33330	35900	100600	200800	174400	120500	57820	36880

CAL YR 1975 TOTAL 467559 MEAN 1281 MAX 5330 MIN 390 CFSM 1.91 IN 25.92 AC-FT 927400
WTR YR 1976 TOTAL 478599 MEAN 1308 MAX 4760 MIN 485 CFSM 1.95 IN 26.53 AC-FT 949300

12371500 FLATHEAD LAKE AT SOMERS, MT

LOCATION.--Lat 48°04'22", long 114°13'30", in NE¼NE¼SE¼ sec.26, T.27 N., R.21 W., Flathead County, Hydrologic Unit 17010208, at steamboat dock at Somers.

DRAINAGE AREA.--7,086 mi² (18,353 km²).

PERIOD OF RECORD.--April to August 1900, daily lake elevations only, at site near Holt, 6 mi (10 km) east of Somers (datum unknown). August 1908 to November 1909 (fragmentary), January 1910 to current year. Monthend contents only for some periods, published in WSP 1316. Prior to April 1923, published as "at Polson." Oct. 1, 1941, to current year, unpublished daily lake elevations at Polson are available in files of Helena district office.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (Somers datum). Subtract 1.00 ft (0.305 m) to convert Somers datum to datum of 1929, supplementary adjustment of 1947. July 1 to Dec. 12, 1923, nonrecording gage at same site and datum.

REMARKS.--Natural storage in Flathead Lake increased by construction of Kerr Dam 4 mi (6 km) downstream from natural lake outlet; storage began Apr. 11, 1938. Usable capacity, 1,791,000 acre0ft (2.21 km³) at controlled spillway elevation 2,893.00 ft (881.786 m). Dead storage unknown below 2,878 ft (877.2 m), elevation of natural outlet. Minimum operating level, 572,300 acre-ft (706 hm³) elevation, 2,883.00 ft (878.738 m), for on-site power generation. Water is used for power production, flood control, recreation, and irrigation. Figures given herein represent usable contents.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 2,208,000 acre-ft (2.72 km³) June 19, 1933, elevation, 2,896.26 ft (882.780 m); minimum, 347,000 acre-ft (428 hm³) Dec. 5, 1936, elevation, 2,881.07 ft (878.150 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Lake reached an elevation of 2,900 ft (883.9 m) during flood in June 1894.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,804,000 acre-ft (2.22 km³) Aug. 16, elevation, 2,893.10 ft (881.817 m); minimum, 749,200 acre-ft (924 hm³) Apr. 5, elevation, 2,884.49 ft (879.193 m).

Capacity table (elevation, in feet, and contents, in acre-ft)

2,884	690,700	2,890	1,417,000
2,886	930,300	2,892	1,665,000
2,888	1,172,000	2,894	1,917,000

ELEVATION, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2892.40	2891.30	2891.34	2890.22	2888.54	2885.81	2884.70	2887.04	2890.17	2892.73	2892.90	2892.92
2	2892.38	2891.23	2891.30	2890.10	2888.55	2885.76	2884.70	2887.00	2890.07	2892.66	2892.88	2892.89
3	2892.34	2891.15	2891.17	2890.05	2888.47	2885.70	2884.62	2887.02	2889.95	2892.65	2892.90	2892.85
4	2892.27	2891.12	2891.14	2890.09	2888.41	2885.66	2884.52	2887.16	2889.90	2892.65	2892.94	2892.80
5	2892.23	2891.17	2891.21	2890.12	2888.41	2885.65	2884.50	2887.28	2889.87	2892.64	2892.91	2892.75
6	2892.17	2891.18	2891.23	2890.08	2888.39	2885.66	2884.60	2887.40	2889.87	2892.71	2892.96	2892.75
7	2892.26	2891.18	2891.27	2889.94	2888.37	2885.68	2884.57	2887.53	2889.93	2892.81	2893.00	2892.70
8	2892.23	2891.21	2891.28	2889.93	2888.23	2885.71	2884.62	2887.68	2890.04	2892.94	2892.98	2892.65
9	2892.20	2891.17	2891.23	2889.90	2888.22	2885.73	2884.85	2887.90	2890.18	2893.01	2892.99	2892.70
10	2892.15	2891.27	2891.23	2889.95	2888.21	2885.75	2885.01	2888.25	2890.42	2892.98	2893.01	2892.66
11	2892.07	2891.29	2891.31	2889.92	2888.21	2885.73	2885.21	2888.62	2890.66	2892.88	2893.05	2892.66
12	2892.03	2891.31	2891.37	2889.89	2888.15	2885.73	2885.48	2888.97	2890.84	2892.94	2893.09	2892.65
13	2892.04	2891.31	2891.41	2889.87	2887.99	2885.60	2885.75	2889.25	2891.02	2892.97	2893.08	2892.65
14	2892.06	2891.38	2891.50	2889.92	2887.87	2885.47	2886.00	2889.40	2891.15	2892.93	2893.08	2892.60
15	2892.07	2891.41	2891.50	2889.92	2887.70	2885.35	2886.24	2889.63	2891.23	2892.90	2893.09	2892.55
16	2892.07	2891.40	2891.46	2889.79	2887.59	2885.26	2886.46	2889.76	2891.30	2892.87	2893.08	2892.55
17	2892.07	2891.39	2891.41	2889.70	2887.50	2885.14	2886.60	2889.85	2891.43	2892.85	2893.04	2892.50
18	2892.03	2891.44	2891.38	2889.59	2887.39	2885.12	2886.72	2889.94	2891.51	2892.83	2893.03	2892.45
19	2891.93	2891.52	2891.37	2889.46	2887.28	2885.05	2886.79	2890.01	2891.62	2892.86	2893.03	2892.40
20	2891.85	2891.60	2891.34	2889.39	2887.16	2885.01	2886.90	2890.05	2891.75	2892.94	2893.02	2892.40
21	2891.82	2891.65	2891.29	2889.32	2886.98	2884.90	2886.90	2890.10	2891.90	2893.02	2892.96	2892.38
22	2891.81	2891.67	2891.25	2889.30	2886.86	2884.86	2886.97	2890.10	2892.08	2893.05	2892.95	2892.30
23	2891.80	2891.68	2891.22	2889.21	2886.73	2884.79	2886.98	2890.10	2892.29	2893.05	2892.98	2892.20
24	2891.75	2891.69	2891.14	2889.12	2886.62	2884.85	2887.05	2890.12	2892.44	2892.97	2892.96	2892.15
25	2891.70	2891.71	2891.02	2889.04	2886.55	2884.83	2887.05	2890.20	2892.57	2892.90	2892.97	2892.15
26	2891.58	2891.65	2890.97	2889.05	2886.40	2884.83	2887.05	2890.24	2892.72	2892.93	2892.97	2892.10
27	2891.52	2891.61	2890.84	2889.03	2886.32	2884.77	2887.07	2890.23	2892.77	2892.95	2892.92	2892.05
28	2891.47	2891.53	2890.71	2888.93	2886.17	2884.71	2887.09	2890.24	2892.70	2892.96	2892.90	2892.00
29	2891.42	2891.47	2890.60	2888.85	2885.96	2884.71	2887.12	2890.26	2892.67	2892.93	2892.90	2891.95
30	2891.37	2891.39	2890.43	2888.73	---	2884.70	2887.13	2890.25	2892.65	2892.91	2892.91	2891.93
31	2891.36	---	2890.36	2888.63	---	2884.64	---	2890.22	---	2892.92	2892.90	---
MAX	2892.40	2891.71	2891.50	2890.22	2888.55	2885.81	2887.13	2890.26	2892.77	2893.05	2893.09	2892.92
MIN	2891.36	2891.12	2890.36	2888.63	2885.96	2884.64	2884.50	2887.00	2889.87	2892.64	2892.88	2891.93
(†)	1586	1589	1462	1249	925.5	767.1	1067	1444	1747	1781	1778	1656
(††)	-132000	+3000	-127000	-213000	-323500	-158400	+299900	+377000	+303000	+34000	-3000	-122000

CAL YR 1975 . . . . . †† -17,000
WTR YR 1976 . . . . . †† -62,000

† Contents, in thousands of acre-feet, at end of month
†† Change in contents, in acre-feet

12372000 FLATHEAD RIVER NEAR POLSON, MT

LOCATION.--Lat 47°40'49", long 114°14'45", in SW¼NE¼SE¼ sec.11, T.22 N., R.21 W., Lake County, Hydrologic Unit 17010212, on left bank 0.5 mi (0.8 km) downstream from Kerr Dam, 4.0 mi (6.4 km) west of Polson, 5.0 mi (8.0 km) downstream from Flathead Lake, and at mile 71.5 (115.0 km).
DRAINAGE AREA.--7,096 mi² (18,379 km²).
PERIOD OF RECORD.--July 1907 to current year.
REVISED RECORDS.--WSP 652: 1926. WSP 752: 1932. WSP 1182: 1948. WSP 1216: Drainage area. WSP 1246: 1928(M). WSP 1636: 1958 (adjusted runoff).
GAGE.--Water-stage recorder. Datum of gage is 2,692.70 ft (820.735 m) above mean sea level (levels by The Montana Power Co.). Prior to Oct. 1, 1941, nonrecording gages or water-stage recorder at several sites near highway bridge at old site of Michell's ferry 6 mi (10 km) downstream from present site, all at datum 2,629.20 ft (801.380 m) above mean sea level (from river-profile survey).
REMARKS.--Records excellent. Flow regulated by Flathead Lake (Kerr Dam) since April 1938 (see p703) and Hungry Horse Reservoir since September 1951 (see p.694). Diversions above station for irrigation of about 10,000 acres (40 km²). Flathead project pumps can divert up to 12,000 acre-ft (15 hm³) per month when required for irrigation of lands downstream from station.
AVERAGE DISCHARGE.--69 years, 11,840 ft³/s (335.3 m³/s), 22.66 in/yr (576 mm/yr), 8,578,000 acre-ft/yr (10.6 km³/yr), adjusted for change in contents in Hungry Horse Reservoir and Flathead Lake.
EXTREMES FOR PERIOD OF RECORDS.--Maximum discharge, 82,800 ft³/s (2,340 m³/s) May 29, 1928, gage height, 17.2 ft (5.24 m), site and datum then in use; minimum probably less than 5.0 ft³/s (0.14 m³/s) Apr. 13, 1938; minimum daily, 32 ft³/s (0.91 m³/s) Apr. 12, 1938.
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1894 reached a stage of about 21 ft (6.4 m), present datum; discharge, about 110,000 ft³/s (3,120 m³/s), from lake elevation-discharge study.
EXTREMES FOR CURRENT YEAR.--Maximum discharge, 37,500 ft³/s (1,060 m³/s) June 2, gage height, 13.48 ft (4.109 m); minimum daily, 3,450 ft³/s (97.7 m³/s) Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9200	11700	12600	12200	13900	12900	10200	18600	33300	25800	9920	8320
2	8930	11500	13600	11600	13900	12400	9700	18500	33900	25300	10400	8480
3	9170	11200	13500	11600	13300	12300	9760	18200	33700	21300	9840	7820
4	8100	10700	13100	11500	13000	12500	9550	18400	26900	20700	7590	7310
5	8700	7510	12400	11100	12900	12100	7120	19100	23800	19600	7500	7440
6	9220	9550	11600	10700	13200	11500	8080	19600	21100	16600	7650	6610
7	9670	10900	9580	11300	12900	11900	8780	19900	19600	13800	8530	6190
8	11200	11900	10500	11500	13100	11400	9640	20600	18600	14000	8330	5080
9	10900	11700	11100	11400	13100	12100	9910	21400	16300	19500	8480	4090
10	9610	11500	11200	11000	13000	12100	10700	22900	16000	25600	7620	6130
11	10400	10900	12000	11200	11800	12600	11000	24500	16200	28500	8620	5390
12	10100	11700	12200	11700	12400	12600	12400	26500	17000	24500	9260	3450
13	7050	11600	12600	11200	13000	12200	13000	27400	17500	21300	9320	3580
14	7250	7230	12100	10300	13700	12500	14700	29000	17400	22400	10200	3860
15	7780	7340	12100	11300	13700	11600	15500	30200	17500	22300	10300	5830
16	8870	7510	12400	11200	13400	11100	14700	31300	16900	22200	10000	6600
17	5520	7520	12500	11200	13500	11600	16500	31500	17100	20800	9430	6560
18	10000	7070	11800	11300	13100	10200	17100	32000	17700	15600	9170	6690
19	11800	6060	12100	11200	13400	11600	17600	32500	17600	10900	9680	6440
20	11400	7300	12200	10900	13100	10800	17400	32500	17300	10200	9480	6370
21	11700	9650	12500	11100	13600	11000	18000	32900	17700	10700	9880	6900
22	11300	12500	12000	11800	13100	11000	18000	32700	17700	13400	10400	6850
23	11000	12300	11700	11000	13100	9720	18300	32700	18000	13700	8700	4830
24	11100	11700	11100	11300	12800	10300	18300	32900	17800	14600	9250	5750
25	11500	11500	11500	11900	12800	9730	18000	32500	18000	13600	9450	5890
26	11500	11700	11700	11300	13200	10300	18100	33100	18100	10800	9240	6240
27	11600	11900	12000	11500	12800	10500	18500	33400	21800	9880	6670	6780
28	11200	12400	11800	11300	12800	9250	18600	33300	26000	10200	6520	6210
29	11300	12700	11500	11600	12800	9440	18500	33300	26700	10600	6320	5470
30	11300	12800	11200	12200	---	9630	18300	33500	26600	10400	7340	6110
31	10500	---	11600	13300	---	9960	---	33500	---	9980	8250	---
TOTAL	308870	311540	369780	353700	380400	348830	425940	858400	623800	528700	273340	183270
MEAN	9964	10380	11930	11410	13120	11250	14200	27690	20790	17060	8817	6109
MAX	11800	12800	13600	13300	13900	12900	18600	33500	33900	28500	10400	8480
MIN	5520	6060	9580	10300	11800	9250	7120	18200	16000	9880	6320	3450
AC-FT	612600	617900	733500	701600	754500	691900	844900	1703000	1237000	1049000	542200	363500
(†)	-280,000	-206,000	-162,000	-398,000	-521,500	-483,400	+85,900	+1,286,000	+735,000	+105,000	-4,000	-114,000
MEAN‡	5,409	6,922	9,294	4,938	4,051	3,391	15,640	48,610	33,140	18,770	8,753	4,193
CFSM‡	.76	.98	1.31	.70	.57	.48	2.20	6.85	4.67	2.65	1.23	.59
IN‡	.88	1.09	1.51	.80	.62	.55	2.46	7.90	5.21	3.05	1.42	.66
AC-FT‡	332,600	411,900	571,500	303,600	233,000	208,500	930,800	2,989,000	1,972,000	1,154,000	538,200	249,500

OBSERVED

CAL YR 1975	TOTAL	4,518,200	MEAN	12,380	MAX	50,000	MIN	3,400	AC-FT	8,962,000	(†)	+774,000
WTR YR 1976	TOTAL	4,966,630	MEAN	13,570	MAX	33,900	MIN	3,450	AC-FT	9,851,000	(†)	+43,000

ADJUSTED

CAL YR 1975	TOTAL	4,908,545	MEAN	13,450	CFSM	1.90	IN	25.73	AC-FT	9,736,000
WTR YR 1976	TOTAL	4,988,454	MEAN	13,630	CFSM	1.92	IN	26.14	AC-FT	9,895,000

† Change in contents, in acre-feet, in Hungry Horse Reservoir and Flathead Lake.
‡ Adjusted for change in contents.

12389000 CLARK FORK NEAR PLAINS, MT

LOCATION.--Lat 47°25'47", long 114°51'18", in E½SW¼ sec.1, T.19 N., R.26 W., Sanders County, Hydrologic Unit 17010213, on right bank 2.4 mi (3.9 km) southeast of Plains, 6.0 mi (9.7 km) downstream from Flathead River, and at mile 239.0 (384.6 km).

DRAINAGE AREA.--19,958 mi² (51,691 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1910 to current year. Monthly discharge only for some periods, published in WSP 1316.

REVISED RECORDS.--WSP 1246: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,449.11 ft (746.489 m) above mean sea level (levels by Corps of Engineers). Prior to Nov. 28, 1911, nonrecording gage at site 50 ft (15 m) upstream at same datum.

REMARKS.--Water-discharge records good. Flow partly regulated by Hungry Horse Reservoir (see p. 694) and by Flathead Lake (see p. 703). Diversions for irrigation of about 335,000 acres (1,360 km²) above station.

AVERAGE DISCHARGE.--66 years, 20,140 ft³/s (570.4 m³/s), 14,590,000 acre-ft/yr (18.0 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 134,000 ft³/s (3,790 m³/s) June 5, 1948, gage height, 19.17 ft (5.843 m); minimum, 3,200 ft³/s (90.6 m³/s) Feb. 8, 1936, Dec. 10, 1940; minimum gage height, 2.70 ft (0.823 m), from partly estimated gage-height record, Sept. 2, 1958.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 87,600 ft³/s (2,480 m³/s) May 16, gage height, 14.58 ft (4.444 m); minimum, 7,960 ft³/s (225 m³/s) Sept. 15, gage height, 4.09 ft (1.247 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10200	17500	17400	17600	18900	17500	16100	33000	68700	47500	16500	13200
2	13600	18500	18200	17200	19400	17200	17100	34600	67400	46700	16700	13400
3	13200	18700	24000	16400	19300	16100	17000	36800	66400	47100	17200	13200
4	13800	18700	28400	16600	18400	16200	16900	40300	63000	40400	16700	12200
5	13000	18000	30300	16900	17500	17500	16900	44900	54900	37900	14800	11900
6	13600	15300	27400	16700	17900	16000	15800	49900	52600	36400	14800	12200
7	14100	17700	23600	16600	17800	15700	18600	51700	49400	32800	15000	11100
8	15500	18600	20600	16800	18100	16400	21400	53700	50400	30500	15200	10900
9	17400	19400	21400	17200	17700	16100	25100	57900	51100	30800	14800	9930
10	17000	19300	22300	16600	17900	17100	28200	64300	52300	36400	15000	8880
11	15800	18300	22300	16600	18200	17500	29800	72400	52900	41800	14200	10600
12	16300	18300	22700	16700	17400	18800	32500	77800	52300	42700	14900	10100
13	16500	18400	22100	16700	17700	18300	36100	80400	51400	39200	15500	8330
14	13200	17700	22000	16200	18900	17700	38800	79300	48500	37300	15400	8340
15	13700	13700	20800	15700	19300	17200	41000	82500	44900	36500	16100	8680
16	14600	13900	20500	16900	19100	16500	40700	86500	42600	35000	16300	10800
17	15700	14200	20200	17700	18800	16600	38000	85100	42900	34000	16000	11300
18	12200	14200	19900	18800	18400	17000	38400	81800	45600	30500	15900	11500
19	16600	13600	18600	19400	18000	17500	37000	80600	45400	25000	15400	11600
20	18200	12300	18400	18400	18200	20100	35800	79200	44000	21000	15500	11500
21	18400	13200	18400	17600	17700	18400	34500	77200	44900	20000	15700	11900
22	19200	15400	18400	17400	18100	17800	34300	75200	48000	21500	15800	12200
23	19400	17800	17500	17500	17700	17200	33300	74000	49500	22700	16000	11800
24	19500	17600	17600	17000	17800	16400	32900	74300	48200	23400	14700	9990
25	19200	17800	18000	17600	17500	17000	32800	75300	45100	23300	15000	10700
26	19300	17500	18600	17700	17900	16100	32700	76700	42400	21800	15500	11100
27	19500	17600	18700	17000	18100	15800	32900	76900	41900	18700	15000	11100
28	19200	17700	18800	17200	17800	16300	33100	74700	43600	17500	12600	11700
29	18300	17800	18300	17100	17800	15100	32900	74300	46900	17500	12200	11100
30	18300	17500	18000	17600	---	15100	32600	73400	46800	17800	11700	10100
31	18100	---	17500	18100	---	15400	---	70700	---	17000	12700	---
TOTAL	502600	506200	640900	533500	527300	523600	893200	2095400	1504000	950700	468800	331350
MEAN	16210	16870	20670	17210	18180	16890	29770	67590	50130	30670	15120	11050
MAX	19500	19400	30300	19400	19400	20100	41000	86500	68700	47500	17200	13400
MIN	10200	12300	17400	15700	17400	15100	15800	33000	41900	17000	11700	8330
AC-FT	996900	1004000	1271000	1058000	1046000	1039000	1772000	4156000	2983000	1886000	929900	657200

CAL YR 1975 TOTAL 8598530 MEAN 23560 MAX 105000 MIN 7640 AC-FT 17060000
WTR YR 1976 TOTAL 9477550 MEAN 25890 MAX 86500 MIN 8330 AC-FT 18800000

PERIOD OF RECORD.--Water years 1969 to current year.
INSTRUMENTATION.--Temperature recorder since Nov. 20, 1968.
REMARKS.--Flow regulated by reservoirs and diversions for irrigation upstream from station.
EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 24.0°C Aug. 3, 1973, Aug. 1, 1974; minimum, 0.0°C on many days during winter periods most years.
EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 21.5°C Aug. 3, 6; minimum, 0.0°C Feb. 6-9.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	15.0	14.0	7.0	7.0	1.5	0.5	1.5	0.5	2.0	2.0	2.5	1.5
2	15.0	14.0	7.5	7.0	3.0	1.5	0.5	0.5	2.0	2.0	1.5	1.0
3	15.0	14.5	8.0	7.5	3.0	3.0	0.5	0.5	2.0	2.0	1.0	0.5
4	15.0	14.5	8.0	8.0	3.0	3.0	0.5	0.5	2.0	0.5	0.5	0.5
5	14.5	14.0	8.0	8.0	3.0	2.5	0.5	0.5	0.5	0.0	0.5	0.5
6	14.0	14.0	8.0	7.5	2.5	2.0	1.0	0.5	0.0	0.0	1.0	0.5
7	14.0	13.0	8.0	7.5	3.0	2.5	1.0	1.0	0.0	0.0	2.0	1.0
8	13.0	12.5	7.5	6.5	3.0	3.0	1.0	1.0	0.0	0.0	2.5	2.0
9	12.5	12.0	6.5	6.0	3.0	3.0	1.5	1.0	0.5	0.0	3.0	2.5
10	12.0	11.5	6.0	5.0	3.5	3.0	1.5	1.0	1.0	0.5	3.5	3.0
11	11.5	11.0	5.0	4.5	3.5	3.5	1.0	1.0	1.5	1.0	4.0	3.5
12	11.0	11.0	4.5	4.5	3.5	3.0	1.0	1.0	1.5	1.5	3.5	3.0
13	11.0	11.0	4.5	4.0	3.0	2.0	1.0	1.0	1.5	1.5	3.0	2.5
14	11.0	10.5	4.0	4.0	2.0	2.0	1.0	1.0	2.0	1.5	2.5	2.5
15	10.5	10.5	4.0	4.0	2.0	2.0	1.5	1.0	2.0	2.0	3.0	2.5
16	10.5	10.0	4.0	4.0	2.0	1.0	2.0	1.5	2.0	2.0	3.5	3.0
17	10.5	10.0	4.0	3.5	1.0	0.5	2.5	2.0	2.0	2.0	4.0	3.5
18	11.0	10.5	3.5	3.0	1.0	0.5	3.0	2.5	2.0	2.0	4.5	4.0
19	10.5	10.0	3.0	2.5	1.0	1.0	2.5	2.0	2.0	2.0	4.5	4.0
20	10.0	10.0	2.5	2.0	1.0	1.0	2.0	2.0	2.0	2.0	4.0	4.0
21	10.0	9.5	2.0	2.0	1.0	1.0	2.0	1.5	2.0	2.0	4.0	3.5
22	9.5	9.0	2.0	2.0	1.0	1.0	1.5	1.5	2.0	2.0	3.5	3.5
23	9.0	8.5	3.0	2.0	1.0	1.0	2.0	1.5	2.5	2.0	4.0	3.5
24	8.5	8.0	3.0	3.0	1.5	1.0	2.0	1.5	3.0	2.5	4.0	3.5
25	8.0	8.0	3.0	2.5	1.5	1.5	2.0	1.5	3.0	3.0	3.5	3.5
26	8.0	8.0	2.5	2.5	2.0	1.5	1.5	1.5	3.0	3.0	3.5	3.5
27	8.0	7.0	2.5	2.0	2.0	2.0	2.0	1.5	3.0	2.5	4.0	3.5
28	7.0	7.0	2.0	1.5	2.0	2.0	2.0	2.0	2.5	2.5	4.0	3.5
29	7.0	7.0	1.5	1.0	2.0	2.0	2.0	2.0	2.5	2.5	4.5	4.0
30	7.0	7.0	1.0	0.5	2.0	2.0	2.0	2.0	---	---	5.0	4.5
31	7.0	7.0	---	---	2.0	1.5	2.0	2.0	---	---	5.0	5.0
MONTH	15.0	7.0	8.0	0.5	3.5	0.5	3.0	0.5	3.0	0.0	5.0	0.5
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	5.5	5.0	8.5	7.5	11.5	11.0	16.0	15.0	21.0	21.0	19.5	18.5
2	5.0	5.0	9.0	8.5	11.5	11.0	16.0	15.0	21.0	21.0	19.0	18.5
3	5.5	5.0	9.0	8.5	12.0	11.5	16.0	16.0	21.5	21.0	19.0	18.0
4	6.0	5.5	9.0	9.0	11.5	11.0	16.5	16.0	21.0	21.0	19.0	18.0
5	7.0	6.0	9.0	8.5	12.0	11.5	17.0	16.0	21.0	20.5	19.0	18.5
6	8.0	7.0	8.5	8.5	12.5	12.0	18.0	17.0	21.5	20.5	19.0	18.0
7	8.0	8.0	9.0	8.5	13.0	12.5	18.0	17.5	21.0	20.0	18.0	16.0
8	8.5	8.0	9.0	9.0	13.5	13.0	18.0	18.0	20.0	19.5	16.0	15.5
9	8.5	8.0	9.5	9.0	14.5	13.5	18.0	17.5	19.0	19.0	16.5	15.5
10	8.0	7.0	10.0	9.5	14.5	14.5	18.5	18.0	19.0	19.0	16.5	15.5
11	8.0	7.5	10.0	9.0	14.5	14.0	19.0	18.5	20.0	19.0	16.5	16.0
12	8.0	8.0	9.0	9.0	14.0	13.5	19.0	18.5	20.5	20.0	16.0	15.5
13	8.0	8.0	9.0	9.0	13.5	12.5	18.5	18.0	20.5	20.0	15.5	14.5
14	8.0	8.0	9.5	9.0	13.0	12.0	18.5	18.5	20.5	20.0	16.0	14.5
15	8.0	7.0	9.5	9.0	13.0	13.0	19.0	18.5	20.0	19.5	16.5	15.0
16	7.0	6.5	9.5	9.0	13.0	13.0	19.5	19.0	19.5	19.0	17.0	16.0
17	6.5	6.0	10.0	9.5	13.0	12.5	20.0	19.5	19.0	18.0	17.5	16.5
18	6.0	6.0	10.0	9.0	13.5	12.5	20.0	19.5	18.0	18.0	17.5	17.0
19	6.0	6.0	9.5	9.0	14.5	13.5	20.0	19.0	18.0	18.0	17.0	16.5
20	6.0	6.0	9.5	9.0	15.0	14.5	20.0	20.0	18.5	18.0	16.5	16.0
21	6.0	6.0	10.0	9.0	15.0	14.5	20.0	20.0	18.5	18.0	16.5	15.5
22	6.0	6.0	10.0	9.5	14.5	14.0	20.0	20.0	19.5	18.5	16.5	16.0
23	7.0	6.0	10.0	9.5	14.0	13.5	21.0	20.0	19.0	19.0	16.0	15.5
24	7.0	7.0	10.0	10.0	13.5	13.0	21.0	20.0	19.0	18.5	16.0	15.5
25	7.0	7.0	10.5	10.0	13.0	12.5	20.0	19.5	19.5	18.5	16.0	15.5
26	7.0	6.5	10.0	10.0	13.0	12.0	21.0	20.0	19.0	17.5	16.5	15.5
27	6.5	6.0	11.5	10.0	13.5	13.0	21.0	20.0	17.5	16.5	16.5	15.5
28	6.0	6.0	11.5	11.0	14.0	13.5	20.0	20.0	17.5	16.5	16.5	15.5
29	7.0	6.0	11.0	11.0	14.5	14.0	20.5	20.0	18.5	17.0	16.5	15.5
30	7.5	7.0	11.0	11.0	15.5	14.5	20.5	20.0	19.0	18.0	16.5	15.5
31	---	---	11.5	11.0	---	---	21.0	20.5	19.5	18.5	---	---
MONTH	8.5	5.0	11.5	7.5	15.5	11.0	21.0	15.0	21.5	16.5	19.5	14.5
YEAR	21.5	0.0										

12389500 THOMPSON RIVER NEAR THOMPSON FALLS, MT

LOCATION.--Lat 47°35'31", long 115°13'43", in NW¼NE¼SE¼ sec.7, T.21 N., R.28 W., Sanders County, Hydrologic Unit 17010213, Lolo National Forest, on right bank 1.3 mi (2.1 km) upstream from mouth and 5.5 mi (8.8 km) east of Thompson Falls.

DRAINAGE AREA.--642 mi^2 (1,663 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to September 1911, October 1911 to September 1916 (occasional gage heights, discharges, and discharge measurements), April 1956 to current year. Records for January and February 1911, published in WSP 916, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1246: 1911. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 2,429.97 ft (740.655 m) above mean sea level (Bureau of Public Roads bench mark). October 1911 to September 1916, nonrecording gage at site 0.2 mi (0.3 km) upstream at different datum.

REMARKS.--Water-discharge records good. Minor diversions above station for irrigation; acreage unknown. Diversion from headwaters of Alder Creek in SW¼ sec.16, T.23 N., R.25 W., to supplement water supply for storage in Upper Dry Fork Reservoir in Little Bitterroot River basin.

AVERAGE DISCHARGE.--20 years, 501 ft^3/s (14.19 m^3/s), 10.60 in/yr (269 mm/yr), 363,000 acre-ft/yr (448 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,080 ft^3/s (172 m^3/s) June 9, 1964, gage height, 8.53 ft (2.600 m); minimum, 68 ft^3/s (1.93 m^3/s) Dec. 10, 1961, result of freezeup; minimum gage height, 1.01 ft (0.308 m) Dec. 17, 1964, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May to June 1948 reached a discharge of 6,190 ft^3/s (175 m^3/s), by slope-area measurement of peak flow at site 0.2 mi (0.3 km) downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,590 ft^3/s (102 m^3/s) May 11, gage height, 6.51 ft (1.984 m); minimum, 131 ft^3/s (3.71 m^3/s) Nov. 30, gage height, 2.48 ft (0.756 m); minimum gage height, 2.38 ft (0.725 m) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	175	199	187	180	272	223	458	911	1140	733	345	240
2	175	208	402	209	284	178	451	1100	1080	705	340	235
3	175	262	747	233	276	188	436	1340	1030	670	335	230
4	214	273	1170	254	202	208	474	1480	987	650	330	230
5	204	258	1150	271	187	192	584	1510	935	643	390	230
6	201	244	772	260	263	205	782	1490	906	617	350	235
7	229	242	669	249	272	215	996	1520	899	611	345	240
8	242	237	578	252	263	214	1210	1750	935	605	354	235
9	217	229	553	248	276	220	1400	2250	1030	592	340	230
10	204	224	542	240	265	229	1300	2670	1100	568	330	226
11	199	217	516	252	260	260	1360	3380	1070	544	319	221
12	200	210	486	240	275	229	1550	3040	1020	544	309	221
13	195	202	409	226	276	248	1690	2410	980	538	304	217
14	187	204	368	232	271	236	1600	2400	921	510	304	217
15	187	225	412	282	265	229	1490	2280	864	485	319	217
16	182	246	325	300	261	240	1310	1980	892	467	335	212
17	178	230	298	339	258	268	1160	1880	1110	456	324	212
18	177	199	355	379	255	335	1060	1800	1150	444	309	208
19	179	173	336	376	247	367	979	1660	1070	431	304	208
20	188	180	342	344	240	341	939	1600	1050	419	304	203
21	192	171	324	323	233	318	910	1510	1020	407	300	199
22	211	176	309	324	231	309	870	1410	980	396	290	195
23	205	199	306	369	242	323	839	1410	943	385	300	195
24	198	221	307	313	236	318	820	1670	892	390	290	199
25	196	210	307	325	241	318	879	1710	850	401	279	203
26	202	213	308	303	242	310	870	1550	803	380	279	195
27	198	202	317	329	239	307	847	1410	765	364	274	195
28	194	184	291	311	243	304	827	1420	719	354	265	195
29	191	159	279	301	233	306	805	1370	705	360	254	191
30	193	146	292	294	---	316	829	1270	726	360	249	186
31	200	---	279	287	---	372	---	1210	---	360	245	---
TOTAL	6088	6345	13936	8845	7308	8326	29725	54391	28562	15359	9615	6420
MEAN	196	212	450	285	252	269	991	1755	952	495	310	214
MAX	242	273	1170	379	284	372	1690	3380	1150	733	390	240
MIN	175	148	187	180	187	178	436	911	705	360	245	186
CFSM	.31	.33	.70	.44	.39	.42	1.54	2.73	1.48	.77	.48	.33
IN.	.35	.37	.81	.51	.42	.48	1.72	3.15	1.65	.89	.56	.37
AC-FT	12080	12590	27640	17540	14500	16510	58960	107900	56660	30460	19070	12730

CAL YR 1975 TOTAL 170652 MEAN 468 MAX 2420 MIN 112 CFSM .73 IN 9.89 AC-FT 338500
WTR YR 1976 TOTAL 194920 MEAN 533 MAX 3380 MIN 148 CFSM .83 IN 11.29 AC-FT 386600

12390700 PROSPECT CREEK AT THOMPSON FALLS, MT

LOCATION.--Lat 47°35'10", long 115°21'15", in lot 12, SE¼SE¼SE¼ sec.7, T.21 N., R.29 W., Sanders County, Hydrologic Unit 17010213, on right bank 500 ft (150 m) downstream from Dry Creek, 0.5 mi (0.8 km) upstream from mouth, and 0.7 mi (1.1 km) south of Thompson Falls.

DRAINAGE AREA.--182 mi^2 (471 km^2).

PERIOD OF RECORD.--April 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,382.40 ft (726.156 m) above mean sea level.

REMARKS.--Records good.

AVERAGE DISCHARGE.--20 years, 271 ft^3/s (7.675 m^3/s), 20.22 in/yr (514 mm/yr), 196,300 acre-ft/yr (242 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,490 ft^3/s (155 m^3/s) Jan. 16, 1974, gage height, 9.86 ft (3.005 m); minimum, 29 ft^3/s (0.82 m^3/s) Jan. 5, 1970, gage height, 0.34 ft (0.104 m), result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,850 ft^3/s (80.7 m^3/s) May 11, gage height, 7.09 ft (2.161 m); minimum, 58 ft^3/s (1.64 m^3/s) Nov. 1, gage height, 0.69 ft (0.210 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	59	98	160	204	142	240	637	762	382	122	84
2	64	60	220	155	202	136	244	865	702	352	132	83
3	64	62	635	153	200	133	252	1020	667	330	126	82
4	68	60	1310	153	192	133	277	1070	618	320	121	81
5	64	59	1360	155	177	131	368	1080	575	307	118	81
6	66	59	830	152	172	131	540	1020	572	295	114	81
7	69	60	615	149	170	131	652	1080	622	289	114	80
8	65	60	507	149	173	129	860	1360	726	284	114	80
9	64	61	472	147	175	129	1150	1750	825	270	111	79
10	64	61	472	142	170	132	1050	2050	860	252	109	78
11	64	61	462	144	168	145	1070	2640	792	236	106	77
12	65	61	438	139	180	145	1250	1980	726	234	105	77
13	64	61	397	135	182	144	1270	1530	686	220	104	76
14	63	61	357	136	182	142	1120	1680	608	206	104	75
15	63	67	337	155	182	141	1000	1500	558	196	110	75
16	62	67	302	163	180	142	838	1320	600	184	114	74
17	61	80	279	216	177	155	730	1330	746	177	104	77
18	61	85	258	282	173	182	648	1260	698	172	100	74
19	62	88	242	315	166	200	582	1150	671	165	98	72
20	62	91	230	312	162	200	554	1140	607	160	100	72
21	64	91	214	297	158	196	530	1020	641	155	98	71
22	64	91	202	289	155	196	504	957	589	149	95	70
23	61	92	192	279	155	208	475	1060	551	144	94	70
24	60	99	188	267	153	210	462	1250	504	149	93	70
25	61	97	182	254	157	210	491	1190	469	142	92	69
26	63	97	184	242	153	206	494	1020	426	136	91	68
27	61	93	200	238	152	202	481	947	391	132	90	68
28	60	92	180	230	150	200	478	1070	366	129	89	67
29	59	90	172	222	145	198	478	972	366	126	87	67
30	59	90	178	214	---	196	520	869	382	126	86	67
31	59	---	170	208	---	208	---	821	---	124	85	---
TOTAL	1950	2255	11883	6252	4965	5153	19608	38638	18366	6543	3226	2245
MEAN	62.9	75.2	383	202	171	166	654	1246	612	211	104	74.8
MAX	69	99	1360	315	204	210	1270	2640	860	382	132	84
MIN	59	59	98	135	145	129	240	637	366	124	85	67
CFSM	.35	.41	2.10	1.11	.94	.91	3.59	6.85	3.36	1.16	.57	.41
IN.	.40	.46	2.43	1.28	1.01	1.05	4.01	7.90	3.75	1.34	.66	.46
AC-FT	3870	4470	23570	12400	9850	10220	38890	76640	36430	12980	6400	4450

CAL YR 1975 TOTAL 102227 MEAN 280 MAX 1790 MIN 40 CFSM 1.54 IN 20.89 AC-FT 202800
WTR YR 1976 TOTAL 121084 MEAN 331 MAX 2640 MIN 59 CFSM 1.82 IN 24.75 AC-FT 240200

12391400 CLARK FORK BELOW NOXON RAPIDS DAM, NEAR NOXON, MT

LOCATION.--Lat 47°57'40", long 115°43'58", in SW¼ sec.33, T.26 N., R.32 W., Sanders County, Hydrologic Unit 17010213, at Noxon Rapids Dam 1 mi (2 km) upstream from Rock Creek, 3 mi (5 km) southeast of Noxon, and at mile 169.7 (273.0 km).

DRAINAGE AREA.--21,833 mi^2 (56,547 km^2).

PERIOD OF RECORD.--May 1960 to current year.

GAGE.--Plant generator rating for discharge through powerplant. Water-stage recorder on reservoir determines head on taintor gates. Datum of gage is at mean sea level (levels by The Washington Water Power Co.).

REMARKS.--Records good. Flow regulated by Hungry Horse Reservoir (see p.694) and Flathead Lake (see p.703). Diversions for irrigation of about 350,000 acres (1,420 km^2) above station. Some sub-surface flow is indicated by comparison with records for adjacent gaging stations. Figures of discharge given herein are combined flows through turbines and spillway.

COOPERATION.--Records collected by The Washington Water Power Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

AVERAGE DISCHARGE.--16 years, 22,430 ft^3/s (792.0 m^3/s), 16,250,000 acre-ft/yr (20.0 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 124,900 ft^3/s (3,540 m^3/s) June 12, 1964; minimum daily, 80 ft^3/s (2.27 m^3/s) Oct. 16, 1960, Aug. 26, 1962, Aug. 18, 25, 31, Sept. 1, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 91,900 ft^3/s (2,600 m^3/s) May 16; minimum daily, 2,210 ft^3/s (62.6 m^3/s) Nov. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13600	12100	17100	18300	11400	22600	22400	34800	71600	46300	10700	11600
2	12300	10300	16100	20000	21700	20600	21400	34800	67100	46400	13600	13000
3	16400	15400	23500	13700	25200	20900	13900	34900	66090	45300	16600	13100
4	10200	20000	32500	2340	21800	21600	12600	35100	64000	39500	14600	13400
5	8280	22300	35300	16300	22000	22000	17300	35000	57400	38200	17900	6530
6	15100	21900	30600	15500	22900	8710	20200	39400	54800	36800	15100	9670
7	14100	20800	29100	17100	14600	7850	16000	53400	51500	33800	11400	11800
8	16500	14400	24300	16800	12100	18100	14700	57500	50800	31400	14600	11600
9	12300	8560	20500	19900	20300	16100	20400	62400	50900	29900	14300	12900
10	17400	21700	22600	16400	19100	15900	30100	70400	53900	31600	14400	10400
11	17000	19700	24400	14000	20200	19800	32200	80800	54600	39400	14900	8420
12	15100	22900	25200	19900	16200	22800	33000	83200	54200	42300	15200	6810
13	15600	23400	24700	24900	18300	19700	34400	86100	53400	39000	16800	11300
14	15700	15600	22900	18700	12600	13200	34600	87300	49600	36100	11500	10300
15	12700	9620	24100	18300	15100	17800	34800	88500	45400	35400	14800	13700
16	17000	8390	21100	13700	20900	20300	35000	91900	44300	34600	15000	10000
17	14000	15800	21100	13600	22100	21400	35100	91700	44300	33100	18700	10100
18	12900	16100	19900	10900	19800	20000	34800	87300	45700	32200	11700	10100
19	12000	18000	22500	19500	19100	18800	35100	86700	47200	29700	16600	6560
20	17700	16000	23200	17900	18200	16600	35100	83900	45100	21700	18200	11800
21	20000	18900	21100	19400	17400	10700	35100	81800	44800	22300	18100	8430
22	23500	5910	23700	21200	11500	19900	35100	80800	47800	22200	11500	11300
23	20800	2210	17100	18500	17900	21900	35000	78600	48500	21000	14900	12000
24	19900	14300	8810	18800	18400	22400	35100	78300	48500	19400	20200	9990
25	17900	22600	6830	15800	20600	24000	35000	80700	45500	21300	15300	9150
26	9910	19900	20100	20000	23300	22300	35000	81000	42600	24600	15400	11500
27	20400	14900	22500	18100	23900	21700	35000	79200	41300	22000	13000	12500
28	19900	19800	21500	17200	23600	18500	34900	77800	41700	18600	13300	11700
29	19400	17300	20600	16300	21600	23600	34900	78700	44500	16500	12200	10700
30	22200	12600	19400	18100	---	16200	34900	77600	45300	18700	13800	10300
31	21200	---	22600	22200	---	21800	---	74500	---	15200	12700	---
TOTAL	500990	481390	684940	533340	551800	587760	883100	2194100	1522300	944500	457000	320660
MEAN	16160	16050	22090	17200	19030	18960	29440	70780	50740	30470	14740	10690
MAX	23500	23400	35300	24900	25200	24000	35100	91900	71600	46400	20200	13700
MIN	8280	2210	6830	2340	11400	7850	12600	34800	41300	15200	10700	6530
AC-FT	993700	954800	1359000	1058000	1094000	1166000	1752000	4352000	3019000	1873000	906500	636000

CAL YR 1975 TOTAL 8824240 MEAN 24180 MAX 106000 MIN 750 AC-FT 17500000
WTR YR 1976 TOTAL 9661880 MEAN 26400 MAX 91900 MIN 2210 AC-FT 19160000

12391550 BULL RIVER NEAR NOXON, MT

LOCATION.--Lat 48°02'50", long 115°50'01", in NW¼NW¼NE¼ sec. 3, T.26 N., R.33 W., Sanders County, Hydrologic Unit 17010213, Kaniksu National Forest, on left bank 1.2 mi (1.9 km) upstream from Cabinet Gorge Reservoir flow line, 1.6 mi (2.6 km) upstream from bridge on State Highway 200, and 4.4 mi (7.1 km) northwest of Noxon.

DRAINAGE AREA.--139 mi (360 km^2).

PERIOD OF RECORD.--Occasional discharge measurements, water years 1942-44, 1971, and annual maximum, water year 1948, all at site 1.6 mi (2.6 km) upstream. October 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,202.40 ft (671.292 m) above mean sea level.

REMARKS.--Records good except those for periods of no gage-height record, Mar. 17 to Apr. 21, which are fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,890 ft^3/s (110 m^3/s) Jan, 16, 1974, gage height, 9.73 ft (2.966 m), from floodmark; minimum discharge, 29 ft^3/s (0.82 m^3/s) Dec. 4, 1972, gage height, 3.92 ft (1.195 m), result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,510 ft^3/s (71.1 m^3/s) May 11, gage height, 8.56 ft (2.609 m); minimum, 103 ft^3/s (2.92 m^3/s) Sept. 30, gage height, 4.54 ft (1.384 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	125	163	175	279	276	231	320	595	940	822	255	190
2	130	155	312	270	270	213	340	770	840	715	258	185
3	135	240	760	270	264	205	370	924	780	650	255	178
4	140	366	1480	270	246	208	400	1010	730	650	246	173
5	150	386	1920	270	231	203	450	1020	695	635	249	165
6	140	342	1440	267	231	203	550	978	740	635	243	160
7	153	318	984	258	234	203	650	1070	924	685	234	158
8	160	285	780	255	237	203	750	1360	1100	605	234	153
9	148	261	745	252	237	203	800	1680	1260	675	261	148
10	138	243	725	243	231	203	850	1990	1320	600	255	140
11	140	228	665	246	228	213	900	2420	1210	530	240	138
12	140	213	605	243	246	208	1000	2290	1070	540	222	135
13	135	205	535	234	261	203	1050	1890	990	565	210	131
14	129	198	490	234	267	200	1000	1800	858	502	203	129
15	131	228	470	258	270	198	900	1680	798	474	200	127
16	135	285	426	276	267	198	850	1550	948	402	225	125
17	133	270	394	306	261	205	750	1540	1210	454	252	126
18	129	246	374	358	261	250	700	1460	1230	438	225	127
19	135	234	354	378	255	300	650	1370	1190	418	205	125
20	140	216	330	382	249	290	600	1390	1140	398	213	125
21	140	203	318	374	243	280	550	1330	1070	394	252	126
22	143	198	306	366	240	270	514	1180	960	362	228	120
23	145	195	297	350	234	260	490	1230	894	334	231	116
24	138	213	288	334	234	250	474	1430	810	324	264	114
25	135	222	285	324	243	250	478	1440	740	321	246	114
26	135	210	291	315	252	250	474	1300	665	306	264	110
27	135	205	306	306	243	250	466	1180	605	300	258	109
28	135	195	285	300	240	250	466	1310	630	279	237	107
29	135	180	276	294	237	260	466	1230	715	267	219	105
30	138	173	300	288	---	270	490	1110	828	261	205	103
31	168	---	294	288	---	280	---	1020	---	258	198	---
TOTAL	4313	7076	17210	9088	7188	7210	18748	42547	27910	14879	7287	4060
MEAN	139	236	555	293	248	233	625	1372	930	480	235	135
MAX	168	386	1920	382	276	300	1050	2420	1320	822	264	190
MIN	125	155	175	234	228	198	320	595	605	258	198	103
CFSM	1.00	1.70	3.99	2.11	1.78	1.68	4.50	9.87	6.69	3.45	1.69	.97
IN.	1.15	1.89	4.61	2.43	1.92	1.93	5.02	11.39	7.47	3.98	1.95	1.09
AC-FT	8550	14040	34140	18030	14260	14300	37190	84390	55360	29510	14450	8050

CAL YR 1975 TOTAL 158140 MEAN 433 MAX 2040 MIN 100 CFSM 3.12 IN 42.32 AC-FT 313700
WTR YR 1976 TOTAL 167516 MEAN 458 MAX 2420 MIN 103 CFSM 3.29 IN 44.83 AC-FT 332300

12392000 CLARK FORK AT WHITEHORSE RAPIDS, NEAR CABINET, ID

LOCATION.--Lat 48°05'18", long 116°04'16", in SW¼NW¼ sec.27, T.55 N., R.3 E., Bonner County, Hydrologic Unit 17010213, on right bank, 0.8 mi (1.3 km) downstream from Cabinet Gorge Dam at cableway, 2.1 mi (3.4 km) downstream from Blue Creek, 6.1 mi (9.8 km) southeast of Clark Fork, and at mile 149.1 (239.9 km). Discharge computed at Whitehorse Rapids, 2.3 mi (3.7 km) downstream.

DRAINAGE AREA.--22,073 mi^2 (57,169 km^2), based on revised area of 22,067 mi^2 (57,154 km^2) for site 0.4 mi (0.6 km) upstream.

PERIOD OF RECORD.--September 1928 to current year. Prior to October 1952, published as "near Heron, MT."

REVISED RECORDS.--WSP 1182: 1936. WSP 1736: 1931, 1936(m), 1937.

GAGE.--Water-stage recorder. Datum of gage is 2,060.00 ft (627.888 m) above mean sea level, levels by Washington Water Power Co. See WSP 1934 for history of changes made prior to Sept. 30, 1952. Water-stage recorder at site 0.4 mi (0.6 km) upstream at datum 60.00 ft (18.288 m) lower Oct. 1, 1952, to Sept. 30, 1964, and at present datum Oct. 1, 1964, to May 21, 1973.

REMARKS.--Records good. Flow regulated by Hungry Horse Reservoir and Flathead Lake. Extreme diurnal fluctuation caused by powerplant at Cabinet Gorge Dam. Diversions above station for irrigation of about 354,000 acres (143,000 hm^2). Discharge measurements indicate about 800 ft^3/s (22.7 m^3/s) ground-water inflow between Cabinet Gorge Dam and Whitehorse Rapids. Records given herein represent flow at Whitehorse Rapids, computed by adding 600 ft^3/s (17.0 m^3/s) to observed flows at the measuring cableway, and are considered comparable to records at former site near Heron, except for minor surface inflow from additional drainage area. To determine flow at Cabinet Gorge Dam, 800 ft^3/s (22.7 m^3/s) should be deducted from discharges published herein.

AVERAGE DISCHARGE.--48 years, 22,590 ft^3/s (639.7 m^3/s), 16,370,000 acre-ft/yr (20.2 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 153,000 ft^3/s (4,333 m^3/s) May 29 to June 1, 1948; maximum gage height, 50.97 ft (15.536 m) May 31, 1948, site and datum then in use; minimum observed, 270 ft^3/s (7.65 m^3/s) Aug. 12, 1952 (discharge measurement), at sites in use since October 1952, during filling of Cabinet Gorge reservoir; minimum daily since reservoir filled, 762 ft^3/s (21.6 m^3/s) Sept. 2, 1962.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge known, 195,000 ft^3/s (5,520 m^3/s) June 1894 (elevation of floodmark at site about 4 mi (6 km) upstream and 0.1 mi (0.2 km) below "near Heron" site, 2,137.1 ft or (651.39 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 104,000 ft^3/s (2,945 m^3/s) May 12, gage height, 25.27 ft (7.702 m); minimum, 1,170 ft^3/s (33.1 m^3/s) Aug. 20, gage height, 4.36 ft (1.329 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13700	16100	18500	20900	14900	25800	25100	39600	74400	50800	12000	16000
2	15300	10300	18100	24100	23500	24800	24100	39600	71400	50800	17000	19000
3	16800	18900	26400	15600	26500	22700	18500	40400	71500	49200	19800	14500
4	10700	20800	36600	4960	26700	23900	14900	40600	69500	43500	19300	9770
5	9730	21300	41700	18000	24600	24300	19700	40900	62700	42100	19700	8120
6	18000	25700	35900	17300	25300	10800	23900	44000	58000	40800	18400	9580
7	14500	22900	33500	19200	17500	9670	18200	58300	56600	38000	12300	13600
8	17800	17600	28500	18700	13300	20800	18200	63300	55100	35800	16000	13600
9	14600	10500	24400	23100	23200	17900	23900	69300	56900	35400	18100	14300
10	18800	23900	25700	20000	22200	18500	33500	78100	58500	35400	16600	12500
11	18600	23600	27900	15200	22100	21700	35900	88100	59500	40700	18200	8970
12	18200	23400	28400	21800	20200	24700	37300	91700	59000	45700	20500	8130
13	16900	24800	27600	27100	21500	21800	40900	92000	57800	42400	15100	13400
14	17400	18400	26900	22200	14500	15200	40800	92400	54000	39400	12500	10300
15	14100	10800	27700	20500	16500	21000	39300	92700	50600	38600	17400	16700
16	17700	8110	24000	17400	23400	23200	39900	95300	50200	38100	18500	11500
17	16800	18500	23600	15300	24900	23400	40300	97800	49900	36300	22900	11900
18	13000	16600	21700	12400	23700	22600	40000	92000	50000	36300	21000	11500
19	15300	20700	26400	23100	21800	22200	38900	91300	52900	32700	19100	7730
20	17700	17300	29900	19700	21200	17800	39500	88800	50500	25700	17300	15600
21	23600	20400	19500	22900	19500	11800	39400	85300	48900	25200	17400	7920
22	24300	8080	26900	24600	13600	22100	39400	84700	53100	24400	13300	13900
23	25300	4000	19800	21000	20300	24500	39400	82600	52000	25000	20900	12100
24	23300	15800	11000	21500	23400	25000	39400	83300	52800	21100	21000	11500
25	19200	23000	7150	18200	21800	27800	39400	84800	50200	24000	16900	10900
26	14500	23600	21700	23000	25500	25800	39400	85000	46500	27400	16300	12700
27	19600	17000	25100	21100	26300	23200	39300	84600	44800	25800	18700	14300
28	22300	20400	24500	19000	26000	20000	38800	83700	45700	20400	16000	14100
29	22400	19000	22900	18400	24300	27800	38900	81300	47900	18400	18500	11700
30	23800	14300	22000	21400	---	19700	39500	80500	49800	21100	13600	10800
31	23800	---	24800	24200	---	23100	---	79500	---	17000	11700	---
TOTAL	557730	535790	778750	611860	628200	663570	1005700	2351500	1660700	1047500	536000	366620
MEAN	17990	17860	25120	19740	21660	21410	33520	75850	55360	33790	17290	12220
MAX	25300	25700	41700	27100	26700	27800	40900	97800	74400	50800	22900	19000
MIN	9730	4000	7150	4960	13300	9670	14900	39600	44800	17000	11700	7730
AC-FT	1106000	1063000	1545000	1214000	1246000	1316000	1995000	4664000	3294000	2078000	1063000	727200

CAL YR 1975 TOTAL 9702130 MEAN 26580 MAX 108000 MIN 3030 AC-FT 19240000
WTR YR 1976 TOTAL 10743920 MEAN 29350 MAX 97800 MIN 4000 AC-FT 21310000

Smaller reservoirs in Pend Oreille River basin in Montana

12325000 GEORGETOWN LAKE.--Lat 46°12'55", long 113°16'40", in SW¼ sec.6, T.5 N., R.13 W., Granite County, Hydrologic Unit 17010202, at dam on Flint Creek, 2 mi (3.2 km) west of Southern Cross, 8 mi (12.9 km) south of Philipsburg, and at mile 38.8 (62.4 km). DRAINAGE AREA, 50.1 mi^2 (130 km^2). PERIOD OF RECORD, October 1939 to current year. May to July 1948 daily elevations and contents, published in WSP 1080. Records of daily elevations since October 1940 are in files of Helena district office. Nonrecording gage read daily. Datum of gage is at mean sea level (levels by The Montana Power Co.).

Reservoir is formed by masonry and concrete dam. Storage began about 1905 to store water for pumpage into Warm Springs Creek for use of reduction works of Anaconda Copper Mining Co. at Anaconda, or for release through Flint Creek for irrigation, power development, and recreation. Usable capacity, 31,040 acre-ft (38.3 hm^3) between elevation 6,398.00 ft (1,950.110 m), bottom of outlet pipes, and 6,429.50 ft (1,959.712 m), maximum design level. Figures given herein represent usable contents. Records furnished by The Montana Power Co. REVISED RECORDS, WSP 1316: Drainage area.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 31,640 acre-ft (39.0 hm^3) Oct. 14, Dec. 2, 1975, elevation, 6,429.70 ft (1,959.773 m); minimum observed, 15,990 acre-ft (19.7 hm^3) Apr. 28, 29, 1957, elevation, 6,424.15 ft (1,958.081 m).

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 31,640 acre-ft (39.0 hm^3) Oct. 14, Dec. 2 , elevation, 6,429.70 ft (1,959.773 m); minimum observed, 25,360 acre-ft (31.3 hm^3) May 3, 6, 8, elevation, 6,427.56 ft (1.959.120 m).

12332500 EAST FORK ROCK CREEK RESERVOIR.--Lat 46°07'54", long 113°22'48, in NE¼ sec.6, T.4 N., R.14 W., Granite County, Hydrologic Unit 17010202, at dam on East Fork Rock Creek, 14 mi (22.5 km) southwest of Philipsburg, and at mile 9.7 (15.6 km). DRAINAGE AREA, 30.3 mi^2 (78.5 km^2). PERIOD OF RECORD, October 1939 to current year (seasonal records only for most years 1946-60, 1964, 1968). Records for October 1955 to April 1956, published in WSP 1446, have been found to be in error and should not be used. May to August 1948 scattered daily contents, published in WSP 1080. Elevations determined by hand levels from reference points at indefinite intervals. Datum of gage is at mean sea level (levels by Montana Department of Natural Resources and Conservation).

Reservoir is formed by earthfill dam with concrete spillway completed in 1937; storage began in 1936. Usable capacity, 16,040 acre-ft (19.8 hm^3) between elevation 5,990.0 ft (1,825.75 m), bottom of outlet, and 6,055.5 ft (1,845.72 m), spillway crest. Dead storage unknown. Figures given herein represent usable contents. Water is used for irrigation and recreation. Records furnished by Montana Department of Natural Resources and Conservation. REVISED RECORDS, WSP 1316: Drainage area.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, in excess of 16,000 acre-ft (19.7 hm^3) when reservoir was full and spilling at times in several years; no storage at times in 1955, 1961, 1966, and 1973.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 16,040 acre-ft (19.8 hm^3) June 1, elevation, 6,055.5 ft (1,845.72 m); minimum observed, 7,230 acre-ft (8.91 hm^3) Sept. 30 (interpolated).

12336500 NEVADA CREEK RESERVOIR.--Lat 46°48'06", long 112°48'42", in NE¼ sec.14, T.12 N., R.10 W., Powell County, Hydrologic Unit 17010203, at dam on Nevada Creek, 7 mi (11.3 km) west of Finn. DRAINAGE AREA, 145 mi^2 (376 km^2). PERIOD OF RECORD, October 1939 to current year (incomplete 1948, 1950-1958, 1961-62, 1965-66, 1969-70). Nonrecording gage usually read at or near end of month. Prior to 1961, elevations determined by hand level from spillway. Datum of gage is at mean sea level (levels by Montana Department of Natural Resources and Conservation).

Reservoir is formed by earthfill dam with concrete spillway completed in 1938. Usable capacity, 12,640 acre-ft (15.6 hm^3) between elevation, 4,551.5 ft (1,387.30 m), bottom of outlet, and 4,616.0 ft (1,406.96 m), spillway crest. Dead storage, 12 acre-ft (14,800 m^3) below elevation 4,551.5 ft (1,387.30 m). Figures given herein represent usable contents. Water is used for irrigation and recreation. Records furnished by Montana Department of Natural Resources and Conservation.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 13,520 acre-ft (16.7 hm^3) June 3, 1953, elevation, 4,618.3 ft (1,407.66 m); no storage Aug. 14 to Oct. 31, 1973.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 13,170 acre-ft (16.2 hm^3) May 15, elevation, 4,617.4 ft (1,407.38 m); minimum observed, 4,760 acre-ft (5.87 hm^3) Sept. 30 (interpolated).

12342000 PAINTED ROCKS LAKE.--Lat 45°43'06", long 114°16'45", in NE¼SE¼ sec.26, T.1 S., R.22 W., Ravalli County, Hydrologic Unit 17010205, at dam on West Fork Bitterroot River, 7 mi (11.3 km) upstream from Nez Perce Creek, 16.5 mi (26.5 km) southwest of Conner, 23 mi (37.0 km) south of Darby, and at mile 19.8 (31.0 km). DRAINAGE AREA, 317 mi^2 (821 km^2). PERIOD OF RECORD, June 1940 to current year (incomplete 1956-58, 1960-61). Prior to December 1958, figures of contents may be total or usable. Records for August 1954, published only in WSP 1736. May to September 1948 scattered daily contents, published in WSP 1080. Prior to October 1959, published as West Fork Bitterroot River Reservoir near Conner. Elevations determined at or near end of month by hand levels from spillway or from staff gage on right wingwall above spillway. Prior to 1959, elevations determined by measuring from floor of control tower. Datum of gage is at mean sea level.

Reservoir is formed by earthfill dam with concrete spillway completed in 1940. Usable capacity, 31,700 acre-ft (39.1 hm^3) between elevation 4,625.5 ft (1,409.85 m), bottom of outlet, and 4,725.5 ft (1,440.33 m), spillway crest. Dead storage, 656 acre-ft (809,000 m^3) below elevation 4,625.5 ft (1,409.85 m). Figures given herein represent usable contents. Water is used for irrigation and recreation. Records furnished by Montana Department of Natural Resources and Conservation prior to December 1958; most monthly readings made by Geological Survey personnel thereafter. REVISED RECORDS, WSP 1316: Drainage area.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 33,930 acre-ft (41.8 hm^3) June 18, 1974, elevation, 4,728.7 ft (1,441.31 m); no storage October 1940 to January 1941, March 1952, March, April 1954, Apr. 25, 1973, winter of 1973-74, 1974-75.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 33,510 acre-ft (41.3 hm^3) May 25, elevation, 4,728.1 ft (1,441.12 m); minimum observed, 7,610 acre-ft (9.38 hm^3) Sept. 30 (interpolated).

12344500 LAKE COMO.--Lat 46°03'40", long 114°14'00", in NE¼NW¼ sec.32, T.4 N., R.21 W., Ravalli County, Hydrologic Unit 17010205, at dam on Rock Creek, 4 mi (6.4 km) northwest of Darby, and at mile 3.6 (5.8 km). DRAINAGE AREA, 54.6 mi^2 (141.4 km^2). PERIOD OF RECORD, October 1939 to current year. April to August 1948 scattered daily gage height and contents, published in WSP 1080. Prior to October 1967, published as Como Lake. Nonrecording gage read at or near end of month in winter and more often during irrigation season but only monthend figures supplied. Datum of gage is at mean sea level.

Reservoir is formed by earthfill dam with concrete spillway completed in 1909. Usable capacity, 34,920 acre-ft (43.1 hm^3) between elevation 4,188.0 ft (1,276.50 m), bottom of outlet, and 4,242.5 ft (1,293.11 m), spillway crest. Dead storage unknown below elevation 4,188.0 ft (1,276.50 m), elevation of natural lake outlet. Figures given herein represent usable contents. Water is used for irrigation and recreation. Records furnished by Bitterroot Irrigation District. REVISED RECORDS, WSP 1316: Drainage area.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 36,920 acre-ft (45.5 hm^3) June 30, 1957, June 30, 1960, July 1, 1963, June 1, 1964, elevation, 4,244.5 ft (1,293.72 m); no storage at times in several years.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 35,410 acre-ft (43.7 hm^3) July 1, elevation, 4,243.0 ft (1,293.27 m); minimum observed, 4,760 acre-ft (5.87 hm^3) Sept. 30, elevation, 4,204.2 ft (1,281.44 m).

Smaller reservoirs in Pend Oreille River basin in Montana--continued

CAMAS RESERVOIRS.--A group of four reservoirs in the Little Bitterroot River basin operated for irrigation and recreation. Nonrecording gages are set to approximate sea level datum and are read on the last day of the month. Figures given herein represent usable contents. Records furnished by Bureau of Indian Affairs. May to July 1948 scattered daily contents for individual reservoirs, published in WSP 1080.

12372500 LITTLE BITTERROOT LAKE.--Lat 48°05'34", long 114°41'51", in SE¼SE¼SW¼ sec.16, T.27 N., R.24 W., Flathead County, Hydrologic Unit 71010212, at dam on Little Bitterroot River, 2 mi (3.2 km) southwest of Marion and at mile 70.3 (113 km). DRAINAGE AREA, 31.8 mi^2 (82.4 km^2). PERIOD OF RECORD, December 1939, April 1940, September 1940 to current year.

Reservoir is formed by earthfill dam; storage began in 1918. Usable capacity, 26,400 acre-ft (32.6 hm^3) between elevation 3,897.98 ft (1,188.104 m) and 3,906.48 ft (1,190.695 m). No dead storage. Prior to 1960, usable capacity, 24,000 acre-ft (29.6 hm^3).

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 26,880 acre-ft (33.1 hm^3) May 31, 1959, elevation, 3,906.60 ft (1,190.732 m); no storage at times in 1939-46.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 9,850 acre-ft (12.1 hm^3) Apr. 30, elevation, 3,901.83 ft (1,189.278 m); minimum observed, 5,450 acre-ft (6.72 hm^3) Sept. 30, elevation, 3,900.33 ft (1,189.821 m).

12373500 HUBBART RESERVOIR.--Lat 47°55'43", long 114°43'53", in SE¼NE¼ sec.18, T.25 N., R.24 W., Flathead County, Hydrologic Unit 17010212, at dam on Little Bitterroot River, 9 mi (14.5 km) northwest of Niarad and at mile 55.8 (89.8 km). DRAINAGE AREA, 114 mi^2 (295 km^2). PERIOD OF RECORD, December 1939, April 1940, September 1940 to current year.

Reservoir is formed by concrete variable-radius dam; storage began in 1924. Usable capacity, 12,120 acre-ft (14.9 hm^3) between elevation 3,140.0 ft (957.07 m) and 3,219.0 ft (981.15 m). No dead storage.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 13,050 acre-ft (16.1 hm^3) May31, 1959, elevation, 3,220.92 ft (987.736 m); no storage September to December 1958, Sept. 30, Oct. 1, 1973.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 11,490 acre-ft (14.2 hm^3) May 31, elevation, 3,217.6 ft (980.72 m); minimum observed, 3,540 acre-ft (4.36 hm^3) Oct. 31, elevation, 3,193.8 ft 973.47 m).

12375000 UPPER DRY FORK RESERVOIR.--Lat 47°44'55", long 114°40'53", in SE¼SE¼SW¼ sec.16, T.23 N., R.24 W., Sanders County, Hydrologic Unit 17010212, at dam on Dry Fork Creek, 4 mi (6.4 km) northwest of Lonepine. DRAINAGE AREA, 8.53 mi^2 (22.1 km^2). PERIOD OF RECORD, April 1940, September 1940 to current year.

Reservoir is formed by earthfill dam; storage began in 1940. Usable capacity, 2,810 acre-ft (3.46 hm^3) between elevation 2,900.0 ft (883.92 m) and 2,928.5 ft (892.61 m). No dead storage. Prior to 1960, usable capacity, 2,700 acre-ft (3.33 hm^3). Natural flow of Alder Creek in Thompson River basin is diverted in SW¼ sec.16, T.23 N., R.25 W., and carried by inter-basin canal to upper Dry Fork Creek for storage in this reservoir.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 2,940 acre-ft (3.63 hm^3) June 30, 1971, June 30, 1975, elevation, 2,928.9 ft (892.73 m); no storage at times in 1940, 1942, 1943.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 2,940 acre-ft (3.63 hm^3) June 30, elevation, 2,928.9 ft (892.73 m); minimum observed, 400 acre-ft (493,000 m^3) Sept. 30, elevation, 2,914.8 ft (888.43 m).

12375500 DRY FORK RESERVOIR.--Lat 47°42'00", long 114°40'02", in SW¼NW¼NW¼ sec.3, T.22 N., R.24 W., Sanders County, Hydrologic Unit 17010212, at dam on Dry Fork Creek, 1 mi (1.6 km) west of Lonepine. DRAINAGE AREA, 17.8 mi^2 (46.1 km^2). PERIOD OF RECORD, December 1939, April 1940, September 1940 to current year. Records published in WSP 1316 were listed in error and should not be used.

Reservoir is formed by earthfill dam; storage began in 1921. Usable capacity, 3,860 acre-ft (4.76 hm^3) between elevation 2,830.5 ft (862.74 m) and 2,856.3 ft (870.60 m). No dead storage. Prior to 1960, usable capacity, 4,000 acre-ft (4.93 hm^3).

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 4,080 acre-ft (5.03 hm^3) Apr. 30, 1942, elevation, 2,856.91 (870.786 m); no storage Aug. 31, 1944, Aug. 31, Sept. 30, 1946, Oct. 31, 1951.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 3,930 acre-ft (4.85 hm^3) Apr. 30, elevation, 2,856.5 ft (870.66 m); minimum observed, 1,860 acre-ft (2.29 hm^2) Oct. 31, elevation, 2,849.4 ft (868.50 m).

MISSION VALLEY RESERVOIRS.--A group of eight reservoirs, in an area east of and tributary to Flathead River and between Flathead Lake and Jocko River, Lake County, Hydrologic Unit 17010212, is operated for irrigation. PERIOD OF RECORD, December 1939, September 1940 to current year. Nonrecording gages are set to approximate sea level datum, and are read on the last day of the month. Figures given herein represent usable contents. Records furnished by Bureau of Indian Affairs. April to July 1948 monthend contents and daily maximums for individual reservoirs, published in WSP 1080.

12371000 TURTLE LAKE.--Lat 47°40'19", long 114°04'32", in SW¼NW¼NE¼ sec.18, T.22 N., R.19 W., at outlet works 4 mi (6.4 km) southeast of Polson, fed entirely by various canals; storage began in 1932. Prior to October 1968, published as "Twin Reservoir." Usable capacity, 899 acre-ft (1.11 hm^3) between elevation 3,061.0 ft (932.99 m) and 3,090.5 ft (941.98 m). No dead storage.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 899 acre-ft (13.3 hm^3) May 21, 22, 1948, elevation, 2,878.2 ft (877.275 m); no storage Sept. 30, 1963.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 10,050 acre-ft (12.4 hm^3) June 30, elevation, 2,876.1 ft (876.64 m); minimum observed, 7,340 acre-ft (9.05 hm^3) Mar.31, elevation, 2,867.0 ft (873.86 m).

12376700 LOWER CROW RESERVOIR.--Lat 47°30'09", long 114°13'35", in SW¼SE¼SE¼ sec.11, T.20 N., R.21 W., at outlet works on Crow Creek, 5.2 mi (8.4 km) northwest of Charlo, and at mile 3.44 (5.53 m); storage began in 1933. Usable capacity, 10,350 acre-ft (12.8 hm^3) between elevation 2,800 ft (853.44 m) and 2,877.0 ft (876.91 m). No dead storage.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 10,770 acre-ft (13.3 hm^3) May 21, 22, 1948, elevation, 2,878.2 ft (877.275 m); no storage Sept. 30, 1963.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 10,050 acre-ft (12.4 hm^3) June 30, elevation, 2,876.1 ft (876.64 m); minimum observed, 7,340 acre-ft (9.05 hm^3) Mar. 31, elevation, 2,867.0 ft (873.868 m).

12377200 MISSION RESERVOIR.--Lat 47°18'54", long 114°01'15", in NW¼SW¼SE¼ sec.16, T.18 N., R.19W., at outlet works on Mission Creek, 4 mi (6.4 km) east of St. Ignatius and at mile 16.7 (26.9 km); storage began in 1935. Usable capacity, 7,250 acre-ft (8.94 hm^3) between elevation 3,340.7 ft (1,018.25 m) and 3,406.0 ft (1,038.15 m).

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 8,370 acre-ft (10.3 hm^3) June 30, 1970, June 30, 1976, elevation, 3,409.8 ft (1,039.31 m); no storage at times during September 1949, February, March 1964.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 8,370 acre-ft (10.3 hm^3) June 30, elevation, 3,409.8 ft (1,039.31 m); minimum observed, 1,660 acre-ft (2.05 m^3) Apr. 30, elevation, 3,383.0 ft (1,031.14 m).

Smaller reservoirs in Pend Oreille River basin in Montana--Continued

MISSION VALLEY RESERVOIRS--Continued

12377300 ST. MARYS LAKE.--Lat 47°15'58", long 113°56'08", in SW¼NE¼NE¼ sec.6, T.17 N., R.18 W., at outlet works on Dry Creek, 8 mi (12.9 km) southwest of St. Ignatius, fed by water diverted from Jocko River; storage began in 1919. Prior to October 1968, published as "Tabor Reservoir." Usable capacity, 23,300 acre-ft (28.7 hm^3) between elevation 3,911.5 ft (1,192.23 m) and 4,025.0 ft (1,226.82 m), not including contents of natural lake. No dead storage.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 23,510 acre-ft (29.0 hm^3) June 30, 1976, elevation, 4,025.7 ft (1,227.03 m); no storage Sept. 30, 1969.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 23,510 acre-ft (29.0 hm^3) June 30, elevation, 4,025.7 ft (1,227.03 m); minimum observed, 1,980 acre-ft (2.44 hm^3) Oct. 31, elevation, 3,924.3 ft (1,196.13 m).

12377900 PABLO RESERVOIR.--Lat 47°38'25", long 114°08'33", in SW¼SW¼NE¼ sec.27, T.22 N., R.20 W., at outlet works 3 mi (4.8 km) south of Polson, 3 mi (4.8 km) northwest of Pablo, fed entirely by various canals, some water supplied by Flathead pumping plant; storage began in 1914. Usable capacity, 27,100 acre-ft (33.4 hm^3) between elevation 3,179 ft (968.96 m), gate sill, and 3,210.2 ft (978.47 m). No dead storage.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 28,120 acre-ft (34.7 hm^3) June 30, 1968, elevation, 3,210.77 ft (978.643 m); no storage at times in several years.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 27,610 acre-ft (34.0 hm^3) June 30, elevation, 3,210.5 ft (978.56 m); minimum observed, 6,860 acre-ft (8.46 hm^3) Sept. 30, elevation, 3,196.2 ft (974.20 m).

12378200 McDONALD RESERVOIR.--Lat 47°25'31", long 113°59'27", in SE¼NE¼NE¼ sec.10, T.19 N., R.19 W., at outlet works on Post Creek, 9 mi (14.5 km) east of Charlo, and at mile 12.4 (20.0 km); storage began in 1919. Usable capacity, 8,220 acre-ft (10.1 hm^3) between elevation 3,545.0 ft (1,080.52 m) and 3,598.0 ft (1,096.67 m), not including contents of natural lake. No dead storage.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 8,250 acre-ft (10.2 hm^3) June 30, 1973, elevation, 3,598.1 ft (1,096.70 m); no storage Aug. 31, 1961, Aug. 30, 1966, Oct. 31, 1971, Apr. 30, 1972.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 8,230 acre-ft (10.1 hm^3) July 31, elevation, 3,598.0 ft (1,096.67 m); minimum observed, 1,030 acre-ft (1.27 hm^3) Oct. 31, elevation, 3,554.6 ft (1,083.44 m).

12379700 KICKING HORSE RESERVOIR.--Lat 47°27'25", long 114°04'35", in SE¼NE¼NE¼ sec.36, T.20 N., R.20 W., at outlet works 4 mi (6.4 km) northeast of Charlo, fed entirely by various canals; storage began in 1930. Usable capacity, 8,350 acre-ft (10.3 hm^3) between elevation 3,042.0 ft (927.20 m) and 3,061.94 ft (933.279 m). Dead storage, 70 acre-ft (86,300 m^3) below elevation 3,042.0 ft (927.20 m).

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 10,320 acre-ft (12.7 hm^3) June 30, 1976, elevation, 3,064.4 ft (934.03 m); no storage Aug. 31, 1961.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 10,320 acre-ft (12.7 hm^3) June 30, elevation, 3,064.4 ft (934.03 m); minimum observed, 2,380 acre-ft (2.93 hm^3) Oct. 31, elevation, 3,052.3 ft (930.34 m).

12380000 NINEPIPE RESERVOIR.--Lat 47°27'20", long 114°08'08", in NE¼NW¼NW¼ sec.34, T.20 N., R.20 W., at outlet works 2 mi (3.2 km) northeast of Charlo, fed entirely by various canals; storage began in 1911. Usable capacity, 14,870 acre-ft (18.3 hm^3) between elevation 2,895.4 ft (882.52 m) and 3,010.0 ft (917.45 m). No dead storage.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 16,950 acre-ft (20.9 hm^3) June 30, 1974, elevation, 3,012.3 ft (918.15 m); no storage Aug. 31, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 15,670 acre-ft (19.3 hm^3) June 30, elevation, 3,010.5 ft (917.60 m); minimum observed, 6,540 acre-ft (8.06 hm^3) Sept. 30, elevation, 3,003.8 ft (915.56 m).

12380500 LOWER JOCKO LAKE.--Lat 47°12'10", long 113°45'35", in NW¼SW¼NW¼ sec.27, T.17 N., R.17 W., Missoula County, Hydrologic Unit 17010212, at dam on Jocko River, 15 mi (24.1 km) east of Arlee, and at mile 39.2 (63.1 km). DRAINAGE AREA, 7.39 mi^2 (19.1 km^2). PERIOD OF RECORD, December 1939, April 1940, September 1940 to current year (no winter records most years since 1947). Records for November 1957, published only in WSP 1736. May to July 1948 scattered daily contents, published in WSP 1080. Nonrecording gage read at end of month. Datum of gage is at mean sea level (levels by Bureau of Indian Affairs).

Reservoir is formed by earthfill dam; storage began in 1937. Usable capacity, 6,380 acre-ft (7.87 hm^3) between elevation 4,267.0 ft (1,300.58 m) and 4,340.0 ft (1,322.83 m). Prior to 1960, usable capacity, 7,600 acre-ft (9.37 hm^3) at elevation 4,350 ft (1,325.88 m). Dead storage unknown below elevation 4,267 ft (1,300.58 m), elevation of natural lake outlet. Transmountain diversion takes water from Placid Creek in Clearwater River basin in SW¼ sec.29, T.17 N., R.16 W., to Upper Jocko Lake, thence to Lower Jocko Lake. Some water may then be diverted to St. Marys Lake for use in the Mission Valley. Figures given herein represent usable contents. Water is used for irrigation and recreation. Records furnished by Bureau of Indian Affairs.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 6,700 acre-ft (8.26 hm^3) June 8, 1948, elevation, 4,342.7 ft (1,323.65 m); no storage at times.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 5,730 acre-ft (7.07 hm^3) June 30, elevation, 4,334.3 ft (1,321.09 m); no storage most of year.

12390000 THOMPSON FALLS RESERVOIR.--Lat 47°35'42", long 115°21'36", in NE¼ sec.7, T.21 N., R.29 W., Sanders County, Hydrologic Unit 17010213, at dam on Clark Fork at Thompson Falls, at mile 208.0 (334.7 km). DRAINAGE AREA, 20,968 mi^2 (54,307 km^2). PERIOD OF RECORD, October 1939 to current year. Nonrecording gage is read several times daily but only monthend figures supplied. Datum of gage is at mean sea level (levels by The Montana Power Co.).

Reservoir is formed by two concrete dams, first generator installed July 1915. Usable capacity, 14,970 acre-ft (18.5 hm^3) between elevation 2,380.0 ft (725.42 m), spillway crest, and 2,396.0 ft (730.30 m), top of flashboards. Dead storage unknown. Figures given herein represent usable contents. Water is used for power development and recreation. Records furnished by The Montana Power Co.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 16,060 acre-ft (19.8 hm^3) Nov. 30, 1949, elevation, 2,396.7 ft (730.51 m); no storage July 31, 1958.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 14,540 acre-ft (17.9 hm^3) Mar. 31, elevation, 2,395.7 ft (730.21 m); minimum observed, 2,150 acre-ft (2.65 hm^3) Apr. 30, elevation, 2,383.7 ft (726.55 m).

Smaller reservoirs in Pend Oreille River basin in Montana--Continued

12391300 NOXON RAPIDS RESERVOIR.--Lat 47°57'38", long 115°44'00", in NE¼SW¼SW¼ sec.33, T.26 N., R.32 W., Sanders County, Hydrologic Unit 17010213, at dam on Clark Fork, 3 mi (4.8 km) southeast of Noxon, 7.2 mi (11.6 km) upstream from Bull River, and at mile 169.7 (273.0 km). DRAINAGE AREA, 21,833 mi^2 (56,547 km^2). PERIOD OF RECORD, April 1959 to current year. Prior to October 1962, published as "Noxon Reservoir." Record of daily elevation on file in Helena district office. Water-stage recorder, midnight readings. Datum of gage is at mean sea level (levels by The Washington Water Power Co.).

Reservoir is formed by concrete and earthfill dam, construction began in 1955, completed in 1959. Storage began Apr. 3, 1959. Usable capacity, 334,600 acre-ft (413 hm^3) between elevation 2,270.00 ft (691.896 m), minimum operating level, and 2,331.00 ft (710.489 m). Figures given herein represent usable contents. Water is used for power and production, flood control, and recreation. Records furnished by The Washington Water Power Co.

EXTREMES FOR PERIOD OF RECORD: Maximum contents, 335,400 acre-ft (414 hm^3) Apr. 7, 1960, elevation, 2,331.10 ft (710.519 m); minimum since first filling, 26,380 acre-ft (32.5 hm^3) May 10, 1967, elevation, 2,277.15 ft (694.075 m).

EXTREMES FOR CURRENT YEAR: Maximum contents, 334,500 acre-ft (412 hm^3) July 4, elevation, 2,330.98 ft (710.483 m); minimum, 158,100 acre-ft (195 hm^3) Apr. 2, elevation, 2,305.28 ft (702.649 m).

Monthend contents, in acre-ft, water year October 1975 to September 1976

Date	Georgetown Lake	East Fork Rock Creek Reservoir	Nevada Creek Reservoir	Painted Rocks Lake	Lake Como	Camas Reservoir	Mission Valley Reservoirs
Sept. 30	30,920	a11,160	a9,800	a27,470	a8,320	15,020	41,720
Oct. 31	30,740	a10,600	a7,960	a18,260	a11,490	15,070	44,920
Nov. 30	31,520	c11,480	a7,510	a18,070	b17,380	15,520	49,170
Dec. 31	30,740	-	8,980	a24,190	b24,520	16,550	54,840
Jan. 31	29,610	-	b9,480	a27,900	a25,510	17,530	57,130
Feb. 29	27,830	-	a7,900	a30,570	24,520	18,120	57,110
Mar. 31	26,130	-	b11,890	a31,970	a24,200	19,670	58,110
Apr. 30	25,580	a15,530	b12,830	a32,690	a25,600	25,190	64,820
May 31	27,770	b16,040	b12,830	a33,380	b32,610	26,760	81,140
June 30	30,030	b14,880	b12,080	a32,680	b35,410	24,470	104,400
July 31	31,100	b10,810	b10,440	a29,720	a31,130	22,190	91,280
Aug. 31	30,800	b9,220	b7,230	a19,850	a14,780	18,750	69,990
Sept. 30	30,920	a7,230	a4,760	a7,610	4,760	15,090	40,280

Date	Lower Jocko Lake	Thompson Falls Reservoir	Noxon Rapids Reservoir
Sept. 30	1,840	13,670	328,300
Oct. 31	1,260	13,390	301,400
Nov. 30	-	13,250	323,400
Dec. 31	-	11,780	295,500
Jan. 31	-	11,900	303,500
Feb. 29	-	11,900	261,800
Mar. 31	-	14,540	172,800
Apr. 30	1,210	2,150	262,100
May 31	4,170	5,260	322,600
June 30	5,730	3,290	333,800
July 31	4,920	7,790	318,200
Aug. 31	1,810	13,810	312,000
Sept. 30	0	11,260	319,400

a Interpolated.
b Figure of contents for first day of following month.

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are presented in a table of annual maximum stage and discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low flow and high flow are given in a second table.

Crest-stage partial-record stations

The following table contains annual maximum discharge for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain, but it is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained, but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.
REVISED RECORDS.--WDR MT-75-1: Drainage areas for discontinued stations.

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (cfs)
Part 6		BIG SHEEP CREEK BASIN					
06013500	Big Sheep Creek below Muddy Creek, near Dell	Lat 44°39'19", long 112°46'41", in SE¼ sec.35, T.13 S., R.10 W., Beaverhead County, 6.5 mi (10.5 km) southwest of Dell (re-established as continuous-record station Oct. 1, 1976).	278	1936‡ 1946-53‡ 1960-76	4- 8-76	6.41	578
		CLARK CANYON BASIN					
06015430	Clark Canyon near Dillon	Lat 45°00'56', long 112°50'10", in SE¼ SW¼ sec. 28, T.9 S., R.10 W., Beaverhead County, at culvert on county road, 1.6 mi (2.6 km) north of Interstate Highway 15 and junction to Clark Canyon Dam, 17.0 mi (27.4 km) southwest of Dillon.	18.0	1974-76	5-12-76	4.65	147
		RUBY RIVER BASIN					
06019400	Sweetwater Creek near Alder	Lat 45°04'39", long 112°13'32", in NW¼ SW¼ sec. 4, T.9 S., R.5 W., Madison County, at bridge on county road, 0.6 mi (1.0 km) upstream from small reservoir, 18 mi (29 km) south of Alder.	81.5	1974-76	4- 4-76	3.65	330
06019800	Idaho Creek near Alder	Lat 45°11'51", long 112°08'20", in center of sec.30, T.7 S., R.4 W., Madison County, at bridge on county road, 9 mi. (14.5 km) south of Alder.	11.0	1960-76	6-22-76	.22	15
		BIG HOLE RIVER BASIN					
06025100	Quartz Hill Gulch near Wise River	Lat 45°46'35", long 112°51'41", in NE¼ SE¼ sec.5, T.1 S., R.10 W., Beaverhead County, 210 ft (64 m) upstream from State Highway 43, 4.2 mi (6.8 km) east of Wise River.	14.3	1974-76	1974 8- 6-75 4- 1-76	1.57 1.64 1.56	14 16 13
		FISH CREEK BASIN					
06027700	Fish Creek near Silver Star	Lat 45°46'18", long 112°14'56", in NW¼ sec.8, T.1 S., R.5 W., Silver Bow County, at bridge on county road, 6 mi (9.7 km) north of Silver Star.	38.9	1959-76	3-17-76	a2.62	b185
		TRIBUTARY BETWEEN FISH CREEK AND BOULDER RIVER					
06030300	Jefferson River tributary No. 2 near Whitehall	Lat 45°52'48", long 111°58'28", in SE¼ sec.33, T.2 N., R.3 W., Jefferson County, at culvert on State Highway 281, 6 mi (9.7 km) east of Whitehall.	4.50	1958-76	6-17-76	0.74	65
		BOULDER RIVER BASIN					
06031950	Cataract Creek near Basin	Lat 46°17'10", long 112°14'33", in NW¼ SW¼ sec.9, T.6 N., R.5 W., Jefferson County, on bridge on county road 200 ft (61.0 m) upstream from Big Limber Gulch, 2.1 mi (3.4 km) northeast of Basin.	30.6	1973-76	5-17-76	2.80	320

See footnotes at end of table, p. 734

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station Name	Location	Drainage area (sq mi)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (cfs)
		MADISON RIVER BASIN					
06038550	Cabin Creek near West Yellowstone	Lat 44°52'19", long 111°20'29", in NW¼ SE¼ sec.15, T.11 W., R.3 E., Gallatin County, at Cabin Creek Campground on U.S. Highway 191, 19 mi (31 km) northwest of West Yellowstone.	30.3	1974-76	5-25-76	2.32	320
		GALLATIN RIVER BASIN					
06043300	Logger Creek near Gallatin Gateway	Lat 45°27'17", long 111°14'38", in SW¼ sec.28, T.4 S., R.4 E., Gallatin County, at culvert on U.S. Highway 191, 10 mi (16.1 km) south of Gallatin Gateway.	2.48	1959-76	5-25-76	0.87	23
06046500	Rocky Creek near Bozeman	Lat 45°39'17", long 110°56'33", in NE¼ sec.23, T.2 S., R.6 E., Gallatin County, 5 mi (8.0 km) east of Bozeman.	50.5	1951-53‡ 1956-57 1959-76	5-12-76	1.56	600
		SIXTEENMILE CREEK BASIN					
06053050	Lost Creek near Ringling	Lat 46°45'38", long 110°47'08", in SE¼ SE¼ sec.24, T.6 N., R.7 E.,Meagher County, on bridge on U.S. Highway 89, 1 mi (1.6 km) southeast of Ringling.	9.59	1974-76	4-12-76	a3.78	b50
		DEEP CREEK BASIN					
06056300	Cabin Creek near Townsend	Lat 46°20'00", long 111°13'05", in NW¼ sec.27, T.7 N., R.4 E., Broadwater County, 100 ft (30 m) upstream from mouth, 14.5 mi (23.3 km) east of Townsend.	11.8	1960-76	8-23-76	0.93	15
		SPOKANE CREEK BASIN					
06058700	Mitchell Gulch near East Helena	Lat 46°34'20", long 111°49'21", in NW¼ sec.2, T.9 N., R.2 W., Lewis and Clark County, at culvert on U.S. Highway 12, 4.7 mi (7.6 km) east of East Helena.	8.09	1959-76	3-17-76	-1.19	b2
		WEGNER CREEK BASIN					
06071600	Wegner Creek at Craig	Lat 47°04'35", long 111°57'17", in NW¼ sec.11, T.15 N., R.3 W., Lewis and Clark County, at bridge on U.S. Highway 91, 0.9 mi (1.4 km) east of Craig.	35.7	1960-76	5- 4-76	1.07	230
		DEARBORN RIVER BASIN					
06073600	Black Rock Creek near Augusta	Lat 47°17'28", long 112°09'46", in NE¼ NW¼ sec.30, T.18 N., R.4 W., Lewis and Clark County, at culvert 0.1 mi (0.2 km) north of Bowmans Corner on U.S. Highway 287, 17.5 mi (28.2 km) southeast of Augusta.	5.54	1974-76	5- 4-76	4.17	120
		SMITH RIVER BASIN					
06076700	Sheep Creek near Neihart	Lat 46°47'59", long 110°42'10", in SE¼ sec.15, T.12 N., R.8 E., Meagher County, at culvert on U.S. Highway 89, 10 mi (16.1 km) south of Neihart.	5.23	1960-76	5-14-76	1.22	58
06077300	Trout Creek near Eden	Lat 47°07'10", long 111°22'19", in NE¼ SE¼ sec.29, T.15 N., R.3 E., Cascade County, at bridge on county road at old town site of Millegan, 18.0 mi (29 km) south of Eden.	13.2	1974-76	5- 3-76	2.08	40
06077800	Goodman Coulee near Eden	Lat 47°19'29", long 111°25'35", in center of sec.12, T.18 N., R.2 E., Cascade County, at culvert on county road, 8 mi (12.9 km) northwest of Eden.	22.1	1959-76	4-30-76	a5.23	b100

See footnotes at end of table, p.734

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (cfs)
		SUN RIVER BASIN					
06087900	Muddy Creek tributary near Power	Lat 47°45'23", long 111°43'47", on south line of SW¼ sec.10, T.23 N., R.1 W., Teton County, at culvert on county road, 3.5 mi (5.6 km) northwest of Power.	3.15	1963-76	10-15-75	2.52	420
		BELT CREEK BASIN					
06090550	Little Otter Creek near Raynesford	Lat 47°15'05", long 110°43'50", in SW¼ NW¼ sec.8, T.17 N., R.8 E., Judith Basin County, at culvert on Secondary Highway 427, 1.0 mi (1.6 km) south of Raynesford.	41.7	1974-76	6-22-76	3.04	20
		SHONKIN CREEK BASIN					
06090810	Ninemile Coulee near Fort Benton	Lat 47°42'01", long 110°42'12" in SE¼ SE¼ sec.34, T.23 N., R.8 E., Chouteau County, at culverts on county road, 8.4 mi (13.7 km) south of Missouri River bridge at Fort Benton.	19.1	1972-76	4-30-76	2.90	43
		MARIAS RIVER BASIN					
06097100	Blacktail Creek near Heart Butte	Lat 48°14'56", long 112°47'19", in NW¼ NW¼ sec.28, T.29 N., R.9 W., Pondera County, at bridge on county road, 3.3 mi (5.3 km) southeast of Heart Butte.	16.4	1975-76	5-14-76	1.77	100
06098700	Powell Coulee near Browning	Lat 48°45'01", long 112°45'21", in SE¼ NE¼ sec.34, T.35 N., R.9 W., Glacier County, at culvert on Secondary Highway 444, 18 mi (29 km) northeast of Browning.	12.7	1974-76	6-19-75 3-18-76	4.96 a2.55	c136 b30
06100300	Lone Man Coulee near Valier	Lat 48°14'10", long 112°13'49", in SE¼ sec.27, T.29 N., R.5 W., Pondera County, at culvert on county road, 5 mi (8.0 km) south of Valier.	14.1	1960-76	8- 5-76	7.65	115
06101520	Favot Coulee tributary near Ledger	Lat 48°15'47", long 111°42'09", in SE¼ SW¼ sec.14, T.29 N., R.1 W., Pondera County, at culvert on Highway 366, 0.3 mi (0.5 km) east of Higgins School, 5.5 mi (8.85 km) east of Ledger.	.86	1974-76	8- 5-76	1.11	7
06101600	Marias River tributary No. 3 near Chester	Lat 48°13'52", long 110°53'27", in NE¼ sec.36, T.29 N., R.6 E., Liberty County, at culvert on State Highway 223, 20 mi (32.2 km) southeast of Chester (discontinued).	.26	1962-76	3-17-76	.52	4
06101700	Fey Coulee tributary near Chester	Lat 48°27'31", long 111°04'47", near center of east line of sec.9, T.31 N., R.5 E., Liberty County, at culvert on county road, 6.5 mi (10.5 km) southwest of Chester.	2.47	1963-76	3-17-76	.69	6
06101800	Sixmile Coulee near Chester	Lat 48°19'49", long 110°56'40", in NW¼ sec.27, T.30 N., R.6 E., Liberty County, at bridge on State Highway 223, 12.5 mi (20.1 km) south of Chester.	30.3	1963-76	3-17-76	.75	b2
06101900	Dead Indian Coulee near Fort Benton	Lat 48°04'54", long 110°50'14", in center of sec.21, T.27 N., R.7 E., Choteau County, at culvert on State Highway 223, 20 mi (32.2 km) northwest of Fort Benton.	2.73	1963-76	6-22-76	1.53	13

See footnotes at end of table, p.734

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station Name	Location	Drainage area (sq mi)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (cfs)
		MARIAS RIVER BASIN--CONTINUED					
06105800	Bruce Coulee tributary near Choteau	Lat 47°44'07", long 112°15'05", near center of sec.21, T.23 N., R.5 W., Teton County, at bridge on county road, 1.2 mi (1.9 km) west of State Highway 287, 6 mi (9.7 km) southwest of Choteau.	1.70	1963-76	5- 4-76	.93	37
06108200	Kinley Coulee near Dutton	Lat 47°50'35", long 111°35'32", in center of north line of sec.15, T.24 N., R.1 E., Teton County, at culverts on county road, 5.1 mi (8.2 km) east of Dutton on Diamond Valley Road.	9.67	1963-76	3-19-76	1.52	30
06108300	Kinley Coulee tributary near Dutton	Lat 47°50'35", long 111°33'07", on north line of NW¼ sec.13, T.24 N., R.1 E., Teton County, at culverts on county road, 6.5 mi (10.5 km) east of Dutton on Diamond Valley Road.	2.65	1963-76	3-19-76	1.53	23
		LITTLE SANDY CREEK BASIN					
06109530	Little Sandy Creek tributary near Virgelle	Lat 48°05'15", long 109°56'34", in NW¼NW¼ sec.21, T.27 N., R.14 E., Choteau County, at culvert on county road, 10 mi (16 km) southeast of Big Sandy.	0.80	1972 1974-76	5-13-74 5- 6-75 3-18-76	1.35 1.01 1.53	c7 c5 9
		ALKALI COULEE BASIN					
06109560	Alkali Coulee tributary near Virgelle	Lat 48°03'19", long 110°05'21", in SW¼NW¼ sec.21, T.27 N., R.14 E., Choteau County, on bridge on county road, 9.1 mi (14.6 km) southeast of Big Sandy.	0.96	1972 1974-76	3-18-76	2.03	(d)
		JUDITH RIVER BASIN					
06111700	Mill Creek near Lewistown	Lat 46°59'44", long 109°26'49", in NE¼ sec.9, T.14 N., R.18 E., Fergus County, at culverts on county road, 5 mi (8.0 km) south of Lewistown.	3.53	1960-76	5- 4-76	0.73	9
06112800	Bull Creek tributary near Hilger	Lat 47°15'10", long 109°21'51", in NW¼ NE¼ sec.12, T.17 N., R.18 E., Fergus County, at culvert on county road, 0.4 mi (0.6 km) west of Hilger.	.99	1974-76	2- 2-76	2.21	14
06114550	Wolf Creek tributary near Coffee Creek	Lat 47°17'56", long 110°07'57", in NE¼ NE¼ sec.25, T.18 N., R.12 E., Judith Basin County, at culverts on county road, 4 mi (6.4 km) southwest of Coffee Creek.	1.73	1974-76	8-22-76	2.12	6
		DOG CREEK BASIN					
06114900	Taffy Creek tributary near Winifred	Lat 47°39'06", long 109°15'33", in SW¼ NW¼ sec.26, T.22 N., R.19 E., Fergus County, at culvert on county road, 8.5 mi (13.7 km) northeast of Winifred.	2.47	1974-76	6-22-76	3.20	56
		TRIBUTARY BETWEEN DOG CREEK AND DUVAL CREEK					
06115100	Missouri River tributary near Landusky	Lat 47°37'35", long 108°41'51", in NW¼ sec.31, T.22 N., R.24 E., Fergus County, at culvert on county road, 19 mi (30.6 km) south of Landusky.	3.39	1962-76	6-22-76	5.35	1,830
		DUVAL CREEK BASIN					
06115300	Duval Creek near Landusky	Lat 47°45'17", long 108°42'23", in center of sec.13, T.23 N., R.23 E., Phillips County, at culvert on U.S. Highway 191, 10.0 road mi (16.1 km) north of Fred Robinson Bridge, 11 mi (17.7 km) southwest of Landusky.	3.31	1963-76	6-22-76	10.46	470

See footnotes at end of table, p. 734

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station Name	Location	Drainage area (sq mi)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (cfs)
		MUSSELSHELL RIVER BASIN					
06117800	Dirty Creek near Martinsdale	Lat 46°33'00", long 110°18'52", in SW¼SW¼ sec.11, T.9 N., R.11 E., Meagher County, at culvert on county road, 6.5 mi (10.5 km) north of Martinsdale.	2.82	1972 1974-76	4-30-76	2.75	7
06120800	Antelope Creek tributary No. 2 near Harlowton	Lat 46°27'47", long 109°49'29", in SE¼ sec.10, T.8 N., R.15 E., Wheatland County, at E. S. Bacon ranch, 1.5 mi (2.4 km) north of Harlowton.	21.2	1956-76	6-22-76	6.50	5,390
06123200	Spring Creek tributary near Harlowton	Lat 46°11'35", long 109°54'10", in NW¼ NW¼ sec.18, T.5 N., R.15 E., Sweet Grass County, at culverts on U.S. Highway 191, 17 mi (27 km) south of Harlowton.	2.10	1973-76	1971 6-22-76	5.69 1.19	204 2
06124600	East Fork Roberts Creek tributary near Judith Gap	Lat 46°40'51", long 109°40'24", in SE¼ SW¼ sec.26, T.11 N., R.16 E., Wheatland County, at culvert on Secondary Highway 248, 3.5 mi (5.6 km) east of Judith Gap.	.74	1974-76	1974 5- 6-75 4-30-76	3.89 2.49 3.61	c82 c26 70
06125520	Swimming Woman Creek tributary near Living Springs	Lat 46°36'24", long 109°21'33", in SW¼ SW¼ sec.20, T.10 N., R.19 E., Golden Valley County, at culvert on county road, 8 mi (12.9 km) northeast of Living Springs.	1.73	1974-76	3-17-76	1.89	2
06125680	Big Coulee Creek tributary near Cushman	Lat 46°14'50", long 109°01'58", in SE¼ SE¼ sec.24, T.6 N., R.21 E., Golden Valley County, at culvert on county road, 3.0 mi (4.8 km) south of Cushman.	1.23	1974-76	4-29-76	e<1.40	1
06127100	South Willow Creek tributary near Roundup	Lat 46°30'41", long 108°34'30", in center of E½ sec.28, T.9 N., R.25 E., Musselshell County, at culvert on U.S. Highway 87 between Roundup and Grass Range, 4.5 mi (7.2 km) north of Roundup (discontinued).	1.38	1962-76	6-22-76	1.20	28
06127200	Mussellshell River tributary near Musselshell	Lat 46°30'22", long 108°15'19", in SW¼ sec.30, T.9 N., R.28 E., Musselshell County, at bridge on U.S. Highway 12, 8 mi (12.9 km) west of Musselshell.	10.8	1963-76	3-21-76	2.04	110
06127505	Fish Creek near Musselshell	Lat 46°27'25", long 108°06'36", in NW¼ SW¼ sec.9, T.8 N., R.29 E., Musselshell County, at culvert on county road, 4.5 mi (7.2 km) southwest of Musselshell.	17.8	1974-76	6-22-76	2.53	21
06127520	Home Creek near Sumatra	Lat 46°38'14", long 107°37'12", in SE¼ NW¼ sec.7, T.10 N., R.33 E., Rosebud County, 100 ft (305 m) upstream from U.S. Highway 12, 3.7 mi (6.0 km) northwest of Sumatra.	1.98	1973-76	1-17-76	1.46	25
06127570	Butts Coulee near Melstone	Lat 46°38'49", long 107°49'15", in center of E½ sec.9, T.10 N., R.31 E., Musselshell County, at culvert on county road, 4 mi (6.4 km) northeast of Melstone.	5.96	1963-76	6-22-76	6.00	180
06127585	Little Wall Creek tributary near Flatwillow	Lat 46°45'36", long 108°36'24", in SE¼ NW¼ sec.32, T.12 N., R.25 E., Petroleum County, at culvert on U.S. Highway 87, 11 mi (17.7 km) southwest of Flatwillow.	3.95	1974-76	4-17-76	1.58	2
06128400	South Fork Bear Creek near Roy	Lat 47°12'04", long 108°47'55", in SW¼ sec.28, T.17 N., R.23 E., Fergus County, at bridge on State Highway 19, 12 mi (19.3 km) southeast of Roy (discontinued).	39.6	1962-76	6-22-76	2.12	115

See footnotes at end of table, p. 734

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station Name	Location	Drainage area (sq mi)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (cfs)
		MUSSELSHELL RIVER BASIN--CONTINUED					
06128500	South Fork Bear Creek tributary near Roy	Lat 47°13'44", long 108°47'54", in SW¼ sec.16, T.17 N., R.23 E., Fergus County, at culvert on State Highway 19, 10.5 mi (16.9 km) southeast of Roy.	5.40	1962-76	6-22-76	1.37	16
06129400	South Fork McDonald Creek tributary near Grass Range	Lat 46°00'10", long 108°47'14", in center of sec.3, T.14 N., R.23 E., Fergus County, at culvert on U.S. Highway 87, 1.5 mi (2.4 km) southeast of Grass Range.	.51	1963-76	3-18-76	.42	8
06129800	Gorman Coulee tributary near Cat Creek	Lat 47°00'45", long 108°05'33", in SE¼ SW¼ sec.31, T.15 N., R.29 E., Petroleum County, at culvert on State Highway 200, 6 mi (9.7 km) southwest of Cat Creek.	.81	1955-76	2-18-76	a.47	b10
06130610	Bair Coulee near Mosby	Lat 47°03'15", long 107°36'43", in NE¼ NE¼ sec.23, T.15 N., R.32 E., Garfield County, at bridge on U.S. Highway 200, 9.0 mi (14.5 km) northeast of Mosby.	1.79	1974-76	3-18-76	1.67	(d)
06130620	Blood Creek tributary near Valentine	Lat 47°20'12", long 108°27'48", in SW¼ NW¼ sec.7, T.18 N., R.26 E., Fergus County, at culvert on county road, 3.0 mi (4.8 km) northeast of Valentine.	1.97	1974-76	6-22-76	1.00	1
		BIG DRY CREEK BASIN					
06130850	Second Creek tributary No. 2 near Jordan	Lat 47°12'23", long 106°48'56", in NE¼ sec.25, T.17 N., R.38 E., Garfield County, at culvert on State Highway 22, 9.5 mi (15.3 km) southeast of Jordan.	2.08	1958-76	6-22-76	1.70	58
06130915	Russian Coulee near Jordan	Lat 47°19'58", long 106°42'39", in NE¼ SW¼ sec.11, T.18 N., R.39 E., Garfield County, at bridge on U.S. Highway 200, 9.4 mi (15.1 km) east of Jordan.	3.45	1974-76	6-22-76	4.57	175
06130925	Thompson Creek tributary near Cohagen	Lat 46°57'05", long 106°27'38", in NW¼ SW¼ sec.19, T.14 N., R.42 E., Garfield County, 100 ft (30.5 m) downstream from bridge, 10.5 mi (16.9 km) southeast of Cohagen.	1.23	1974-76	8- 9-76	6.21	510
06130940	Spring Creek tributary near Van Norman	Lat 47°14'58", long 106°18'21", in NW¼ NE¼ sec.12, T.17 N., R.42 E., Garfield County, at culvert on county road, 8 mi (12.9 km) southeast of Van Norman.	1.39	1974-76	3-11-76	3.80	42
		TIMBER CREEK BASIN					
06131100	Timber Creek tributary near Van Norman	Lat 57°23'32", long 106°10'15", in SE¼ NE¼ sec.24, T.19 N., R.43 E., McCone County, at culvert on State Highway 24, 12 mi (19 km) east of Van Norman.	0.74	1974-76	8- 9-76	4.24	110
		McGUIRE CREEK BASIN					
06131300	McGuire Creek tributary near Van Norman	Lat 47°36'22", long 106°09'12", in NE¼ SE¼ sec.2, T.21 N., R.43 E., McCone County, at culvert on State Highway 24, 20.5 mi (33.0 km) northeast of Van Norman.	0.74	1974-75	1974 6-30-75 6-11-76	4.39 3.29 3.26	c137 c80 79
		MILK RIVER BASIN					
06132400	Dry Fork Milk River near Babb	Lat 48°49'50", long 113°12'02", in SE¼ sec.32, T.36 N., R.12 W., Glacier County, at bridge on State Highway 464, 11 mi (17.7 km) east of Babb.	17.9	1961-76	4- 4-76	a6.15	500

See footnotes at end of table, p. 734

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station Name	Location	Drainage area (sq mi)	Period of record	Annual maximum Date	Gage height (feet)	Dis-charge (cfs)
		MILK RIVER BASIN--CONTINUED					
06134800	Van Cleeve Coulee tributary near Sunburst	Lat 48°53'05", long 111°49'20", on north line of NE¼ sec.14, T.36 N., R.2 W., Toole County, at culvert on county road, 3.7 road mi (6.0 km) east of the interchange on Interstate 15 at Sunburst.	10.8	1963-76	3-18-76	2.36	58
06136400	Spring Coulee tributary near Simpson	Lat 48°56'36", long 110°12'51", in SW¼ SW¼ sec.24, T.37 N., R.12 E., Hill County, at culvert on Highway 232, 1.3 mi (2.1 km) northwest of Simpson, 38 mi (61 km) northwest of Havre.	2.49	1972 1974-76	1972 5-13-74 4-19-75 3-17-76	4.12 2.00 1.35 1.97	c35 c9 c3 9
06137600	Sage Creek tributary No. 2 near Joplin	Lat 48°54'38", long 110°46'20", in NE¼ NE¼ sec.2, T.36 N., R.7 E., Liberty County, at culvert on Highway 224, 25.2 mi (40.5 km) north of Joplin.	2.21	1974-76	3-17-76	2.44	20
06138700	South Fork Spring Coulee near Havre	Lat 48°24'33", long 109°49'44", in NE¼ sec.31, T.31 N., R.15 E., Hill County, at culvert on county road, 12 mi (19.3 km) southwest of Havre.	6.47	1960-76	3-17-76	.61	7
06153400	Fifteenmile Creek tributary near Zurich	Lat 48°38'36", long 109°02'50", in SE¼ SE¼ sec.1, T.33 N., R.21 E., Blaine County, at culvert on county road, 4.3 mi (6.9 km) north of Zurich.	1.40	1974-76	1974 7-31-75 3-18-76	3.60 3.26 1.21	c41 c35 1
06154350	Peoples Creek tributary near Lloyd	Lat 48°11'33", long 109°18'25", in SW¼ SE¼ sec.8, T.28 N., R.19 E., Blaine County, at culvert on county road, 8 mi (12.9 km) south of Lloyd.	2.51	1974-76	6-14-76	4.26	9
06155300	Disjardin Coulee near Malta	Lat 48°16'33", long 107°57'49", in SE¼ NW¼ sec.16, T.29 N., R.29 E., Phillips County, at bridge on U.S. Highway 191, 8 mi (12.9 km) southwest of Malta.	3.67	1956-76	3-18-76	1.14	27
06155600	Murray Coulee tributary near Hogeland	Lat 48°47'16", long 108°44'50", in SW¼ SE¼ sec.17, T.35 N., R.23 E., Blaine County, at culverts on county road, 6.5 mi (10.5 km) southwest of Hogeland.	1.77	1974-76	6-19-75 3-18-76	5.82 3.95	c345 153
06156100	Lush Coulee near Whitewater	Lat 48°41'10", long 107°41'25", in SE¼ SE¼ sec.20, T.34 N., R.31 E., Phillips County, at culverts on county road, 6 mi (9.7 km) southwest of Whitewater.	9.58	1974-76	-- 1974 4-20-75 6-21-76	4.69 2.82 3.00 1.64	c178 c83 c91 39
06164600	Beaver Creek tributary near Zortman	Lat 47°55'38", long 108°21'07", in NE¼ NE¼ sec.15, T.25 N., R.26 E., Phillips County, at bridge on State Highway 191, 8 mi (12.9 km) east of Zortman.	3.89	1972 1974-76	7- 9-76	2.13	(d)
06165200	Beaver Creek tributary No. 2 near Malta	Lat 48°14'34", long 107°32'58", in SW¼ NE¼ sec.27, T.29 N., R.32 E., Phillips County, at culvert on county road, 17 mi (27 km) southeast of Malta.	1.95	1974-76	4- 8-75 3-15-76	1.40 1.72	c3 8
06172300	Unger Coulee near Vandalia	Lat 48°22'11", long 106°47'37", in SW¼ sec.9, T.30 N., R.38 E., Valley County, at bridge on U.S. Highway 2, 4.5 mi (7.2 km) northeast of Vandalia.	11.1	1958-76	7- 2-76	3.08	320
06173300	Willow Creek tributary near Fort Peck	Lat 47°53'36", long 106°53'22", in SE¼NE¼ sec.25, T.25 N., R.37 E., Valley County, at culvert on county road, 21.5 mi (34.6 km) southwest of Fort Peck.	.86	1972 1974-76	7- 1-76	8.25	120
06174300	Milk River tributary No. 3 near Glasgow	Lat 48°12'17", long 106°33'05", in SW¼ SW¼ sec.3, T.28 N., R.40 E., Valley County, at culvert on county road 4 mi (6.4 km) northeast of Glasgow.	1.82	1974-76	7- 1-76	2.51	43

See footnotes at end of table, p. 734

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station Name	Location	Drainage area (sq mi)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (cfs)
		MILK RIVER BASIN--CONTINUED					
06174600	Snow Coulee at Opheim	Lat 48°50'27", long 106°24'47", in SE¼ SE¼ sec.25, T.36 N., R.40 E., Valley County, at culvert on FAS Route 247, south of Opheim.	2.95	1972 1974-76	7- 1-76	2.74	87
		SAND CREEK BASIN					
06175550	East Fork Sand Creek near Vida	Lat 47°48'10", long 105°36'27", in NW¼ sec.31, T.24 N., R.48 E., McCone County, at culverts on county road, 6 mi (9.7 km) southwest of Vida.	8.51	1963-76	6-11-76	4.40	420
		WOLF CREEK BASIN					
06175700	East Fork Wolf Creek near Lustre	Lat 48°24'58", long 105°47'51", in SE¼ sec.30, T.31 N., R.46 E., Valley County, at culverts on county road, 4 mi (6.4 km) east of Lustre.	9.61	1956-76	4- 9-71 7- 1-75 3-19-76	5.33 2.89 5.67	c150 c53 744
06175900	Wolf Creek tributary No. 2 near Wolf Point	Lat 48°12'05", long 105°44'45", in sec. 11, T.28 N., R.46 E., Roosevelt County, at bridge on county road, 9.5 mi (15.3 km) northwest of Wolf Point.	6.10	1955-76	3-19-76	4.45	180
06176500	Wolf Creek near Wolf Point	Lat 48°05'47", long 105°40'41", in N½ sec.17, T.27 N., R.47 E., Roosevelt County, 2.0 mi (3.2 km) northwest of Wolf Point.	251	1908-14‡ 1950-53‡ 1954 1956-73	3-20-60	9.71	7,500
		TRIBUTARY BETWEEN WOLF CREEK AND TULE CREEK					
06176900	Missouri River tributary No. 6 near Wolf Point	Lat 48°03'23", long 105°33'22", in NW¼ NW¼ sec.32, T.27 N., R.48 E., McCone County, at upstream end of culvert on county road, 5 mi (8 km) southwest of Wolf Point.	0.08	1973-76	1974 4-26-75 3-19-76	3.90 3.51 5.51	c16 c11 34
		TULE CREEK BASIN					
06177020	Tule Creek tributary near Wolf Point	Lat 48°14'40", long 105°29'31", in SE¼ SE¼ sec.21, T.29 N., R.48 E., Roosevelt County, at upstream end of culvert, 12.5 mi (20.1 km) northeast of Wolf Point.	0.74	1974-76	6- 7-76	1.58	22
		REDWATER RIVER BASIN					
06177050	East Fork Duck Creek near Brockway	Lat 47°11'14". long 105°47'09", in sec.31, T.17 N., R.47 E., McCone County, at bridge on county road, 8 mi (12.9 km) south of Brockway.	12.4	1955-76	3-18-76	1.09	65
06177700	Cow Creek tributary near Vida	Lat 47°42'34", long 105°29'24", in SE¼ sec.36, T.23 N., R.48 E., McCone County, at bridge on State Highway 13, 8.8 mi (14.2 km) south of Vida.	1.71	1963-76	7- 2-76	3.74	620
06177720	West Fork Sullivan Creek near Richey	Lat 47°31'47", long 105°13'43", in NW¼ NW¼ sec.4, T.20 N., R.51 E., Dawson County, at culvert on county road, 11 mi (18 km) southwest of Richey.	13.8	1974-76	5- 7-75 7- 2-76	3.52 5.52	c49 104
06177800	Wolf Creek tributary near Vida	Lat 47°54'49", long 105°29'53", in SE¼ sec.15, T.25 N., R.48 E., McCone County, at bridge on State Highway 13, 5.5 mi (8.8 km) north of Vida.	.91	1962-76	7- 2-76	2.59	96
06177820	North Fork Creek tributary near Richey	Lat 47°52'28", long 104°56'10", in SE¼ NE¼ sec.36, T.25 N., R.52 E., Richland County, at culvert on county road, 17 mi (27 km) northeast of Richey.	.74	1974-76	3-18-76	3.71	54
		POPLAR RIVER BASIN					
06179100	Butte Creek tributary near Four Buttes	Lat 48°48'33", long 105°35'08", in SE¼ SE¼ sec.5, T.35 N., R.47 E., Daniels County, at upstream end of culvert on FAS Route 248, 1 mi (1.6 km) east of Four Buttes.	1.57	1972 1974-76	1972 3-18-76	4.55 2.77	c144 48

See footnotes at end of table, p.734

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station Name	Location	Drainage area (sq mi)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (cfs)
		TRIBUTARY BETWEEN POPLAR RIVER AND BIG MUDDY CREEK					
06181200	Missouri River tributary No. 2 near Brockton	Lat 48°09'20", long 104°53'32", in NE¼ sec.29, T.28 N., R.53 E., Roosevelt County, at culverts on U.S. Highway 2, 1.2 mi (1.9 km) east of Brockton (discontinued).	1.60	1962-76	4- 1-64	1.53	c12
					6-15-65	1.88	c17
					7- 4-66	1.23	c8
					3- -67	2.91	c35
					8-15-68	e<.05	c1
					4- 6-69	1.30	c8
					7-23-70	1.64	c13
					3-15-71	1.10	c7
					6- 9-72	5.35	c103
					6-18-73	e<.05	c1
					5-13-74	.76	c2
					7- -75	2.01	c19
					6- 8-76	1.35	9
		BIG MUDDY CREEK BASIN					
06182700	Middle Fork Big Muddy Creek near Flaxville	Lat 48°48'08", long 105°06'48", in SW¼ NE¼ sec.12, T.35 N., R.50 E., Daniels County, at bridge on State Highway 5, 2.8 mi (4.5 km) east of Flaxville.	2.88	1972	1972	3.32	(d,f)
				1974-76	4-22-75	2.62	59
					3-18-76	3.89	142
06183300	Spring Creek near Plentywood	Lat 48°48'45", long 104°28'16", in SE¼ sec.1, T.35 N., R.55 E., Sheridan County, at culvert on county road 5 mi (8.0 km) northeast of Plentywood.	7.05	1955-76	6-11-76	3.34	94
06183400	Spring Creek at Highway 16, near Plentywood	Lat 48°46'03", long 104°31'10", in SE¼ sec.21, T.35 N., R.55 E., Sheridan County, at bridge on State Highway 16, 1.5 mi (2.4 km) east of Plentywood.	16.9	1955-73 1976	6-11-76	3.80	690
06184200	Lost Creek tributary near Homestead	Lat 48°24'09", long 104°29'49", in NW¼NW¼ sec.31, T.31 N., R.56 E., Sheridan County, at bridge on State Highway 16, 2.3 mi (3.7 km) southeast of Homestead.	1.90	1972	(g)	3.48	bf50
				1974-76	5- 7-75	c2.27	1
					6-11-75	12.60	1,260
06185100	Big Muddy Creek tributary near Culbertson	Lat 48°11'34", long 104°41'49", in center of east edge of sec.11, T.28 N., R.54 E., Roosevelt County, at culverts on county road, 9 mi (14.5 km) northwest of Culbertson.	7.38	1963-76	6-11-76	8.66	317
		TRIBUTARIES BETWEEN BIG MUDDY CREEK AND YELLOWSTONE RIVER					
06185200	Missouri River tributary No. 3 near Culbertson	Lat 48°06'17", long 104°30'55", in center of sec.8, T.27 N., R.56 E., Richland County, at culvert on county road, 3 mi (4.8 km) south of Culbertson.	1.23	1963-76	6-11-76	7.43	280
06185300	Missouri River tributary No. 4 near Bainville	Lat 48°08'24", long 104°20'35", in NW¼ sec.34, T.28 N., R.57 E., Roosevelt County, at culvert on U.S. Highway 2, 0.8 mi (1.3 km) east of Lannark, 8 mi (12.9 km) east of Culbertson.	11.6	1963-76	6-11-76	3.57	445
06185400	Missouri River tributary No. 5 at Culbertson	Lat 48°09'31", long 104°30'55", in SE¼ sec.20, T.28 N,m R.56 E., Roosevelt County, at culvert on State Highway 16, at Culbertson Rodeo Grounds.	3.67	1963-76	6-11-76	10.52	1,320
		YELLOWSTONE RIVER BASIN					
06201700	Hump Creek near Reed Point	Lat 45°42'33", long 109°35'35", in NE¼ sec.35, T.1 S., R.17 E., Sweet Grass County, at bridge on Interstate Highway 90 and U.S. Highway 10, 2 mi (3.2 km) west of Reed Point.	7.61	1960-76	5-11-76	2.28	123
06205100	Allen Creek near Park City	Lat 45°35'43", long 109°03'22", in NE¼ sec.7, T.3 S., R.22 E., Stillwater County, about 200 ft (61 m) upstream from Cove ditch flume, 7 mi (11.3 km) west of Park City.	7.17	1961-76	5-14-76	.97	80
06207600	Jack Creek tributary near Belfry	Lat 45°09'44", long 108°49'24", in SE¼ SE¼ sec.6, T.8 S., R.24 E., Carbon County, on railroad bridge 100 ft (30.5 m) upstream from U.S. Highway 310, 9 mi (14 km) east of Belfry.	.85	1975-76	5- 7-75	1.19	c9
					8- 3-76	2.34	(d)

See footnotes at end of table, p. 734

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station Name	Location	Drainage area (sq mi)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (cfs)
		YELLOWSTONE RIVER BASIN--CONTINUED					
06214150	Mills Creek at Rapelje	Lat 45°58'03", long 109°15'17", in SE¼ NE¼ sec.32, T.3 N., R.20 E., Stillwater County, at culvert on Secondary Highway 306, 0.4 mi (0.6 km) south of Rapelje.	3.32	1974-76	5-19-75 2-12-76	1.78 1.44	c8 4
06216200	West Wets Creek near Billings	Lat 45°37'38", long 108°24'14", in SW¼ sec.28, T.2 S., R.27 E., Yellowstone County, at bridge on county road, 19 mi (30.6 km) southeast of Billings.	8.80	1955-76	6-22-76	2.16	90
06217300	Twelvemile Creek near Shepherd	Lat 45°55'16", long 108°27'44", in NW¼ SW¼ sec.14, T.2 N., R.26 E., Yellowstone County, at bridge on U.S. Highway 87, 6.0 mi (9.7 km) west of Shepherd.	9.05	1973-76	1973 6- 8-74 2-24-75 5-14-76	1.89 1.20 1.78 1.32	f70 20 60 25
06217700	Crooked Creek tributary near Shepherd	Lat 46°04'23", long 108°30'09", in SW¼ sec.21, T.4 N., R.26 E., Yellowstone County, at bridge on county road, 1.7 mi (2.7 km) west of U.S. Highway 87 between Billings and Roundup, 12 mi (19.3 km) northwest of Shepherd.	7.21	1962-76	5-14-76	.91	90
06290200	Little Bighorn River tributary near Wyola	Lat 45°08'18", long 107°23'08", in SE¼ NW¼ sec.14, T.8 S., R.35 E., Big Horn County, at private bridge, 0.8 mi (1.3 km) northeast of Wyola.	4.43	1973-76	2- 8-76	1.22	3
06293300	Long Otter Creek near Lodgegrass	Lat 45°26'15", long 107°23'42", near center of line between NE¼ and NW¼ of SE¼ sec.28, T.4 S., R.35 E., Big Horn County, at culvert on U.S. Highway 87, 10 mi (16 km) north of Lodgegrass.	11.7	1973-76	1973 1-16-74 4- 4-75 3-19-76	2.81 1.65 4.60 1.73	c83 c18 c126 17
06294400	Andresen Coulee near Custer	Lat 46°03'53", long 107°32'30", in center of W½ sec.30, T.4 N., R.34 E., Yellowstone County, at culvert on State Highway 47, 4.5 mi (7.2 km) south of Custer.	2.33	1963-76	6-11-76	.88	14
06294600	Tullock Creek tributary near Hardin	Lat 45°47'52", long 107°15'40", in NW¼NW¼ sec.33, T.1 N., R.36 E., Big Horn County, at culvert on State Highway 384, 18 mi (30 km) northeast of Hardin.	8.63	1973-75	1973 6-11-76	2.12 e<1.02	cf88 b10
06294800	Unknown Creek near Bighorn	Lat 46°11'50", long 107°24'33", in SE¼ sec.12, T.5 N., R.34 E., Treasure County, at bridge on Interstate Highway 94 and U.S. Highways 10 and 312, 4 mi (6.4 km) east of Bighorn (discontinued).	14.6	1962-76	6-11-76	3.62	670
06294850	Buckingham Coulee near Myers	Lat 46°14'12", long 107°17'24", in SW¼ sec.25, T.6 N., R.35 E., Treasure County, at bridge on Interstate Highway 94 and U.S. Highways 10 and 312, 3 mi (4.8 km) southeast of Myers (discontinued).	2.63	1962-76	6-11-76	1.49	38
06294900	Middle Fork Froze to Death Creek tributary near Ingomar	Lat 46°34'52", long 107°23'59", in NE¼ sec.35, T.10 N., R.34 E., Rosebud County, at culverts on U.S. Highway 12, 1.1 mi (1.8 km) west of Ingomar (discontinued).	1.36	1962-76	4- 6-76	.21	2
06294930	Sarpy Creek tributary near Colstrip	Lat 45°54'54", long 107°07'57", in SW¼ SW¼ sec.16, T.2 N., R.37 E., Treasure County, at culvert on county road, 25 mi (40 km) west of Colstrip.	4.44	1972-76	6- 7-76	1.29	7
06294960	Anderson Creek at Vananda	Lat 46°23'35", long 107°00'27", in SE¼ NE¼ sec.6, T.7 N., R.38 E., Rosebud County, at bridge on U.S. Highway 12, at Vananda.	5.71	1973-76	2-24-76	1.78	(d)
06294985	East Fork Armells Creek tributary near Colstrip	Lat 46°04'01", long 106°42'39", in SE¼ SE¼ sec.26, T.4 N., R.40 E., Rosebud County, at bridge on State Highway 315, 13 mi (21 km) north of Colstrip.	1.87	1973-76	7- 2-76	2.45	(d)

See footnotes at end of table, p. 734

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station Name	Location	Drainage area (sq mi)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (cfs)
		YELLOWSTONE RIVER BASIN--CONTINUED					
06295020	Short Creek near Forsyth	Lat 46°17'44", long 106°40'05", in NW¼ sec.12, T.6 N., R.40 E., Rosebud County, at bridge on county road, 2.4 mi (3.9 km) northeast of U.S. Highway 12, 2 mi (3.2 km) north of Forsyth.	3.23	1962-76	4- 5-76	.82	1
06295130	Rosebud Creek tributary near Busby	Lat 45°35'00", long 106°51'32", in NE¼ sec.13, T.3 S., R.39 E., Big Horn County, at bridge on U.S. Highway 212, 1.1 mi (1.8 km) east of Two Moon Creek, 6 mi (9.7 km) northeast of Busby.	1.14	1963-76	2-24-76	.74	4
06296100	Snell Creek near Hathaway	Lat 46°17'39", long 106°08'52", in NW¼ sec.7, T.6 N., R.45 E., Custer County, at bridge on old U.S. Highway 10 and 12, 2.5 mi (4.0 km) northeast of Hathaway.	10.5	1963-76	6- 7-76	2.49	410
06296115	Reservation Creek near Miles City	Lat 46°22'38", long 105°58'21", in SE¼ NE¼ sec.9, T.7 N., R.46 E., Custer County, at bridge on county road No. 446, 6.5 mi (10.5 km) southwest of Miles City.	6.29	1973-75	5-28-74 5- 6-75 7- 8-76	1.19 6.40 4.12	55 560 250
06306900	Spring Creek near Decker	Lat 45°05'09", long 106°50'12", in SE¼ sec.33, T.8 S., R.40 E., Big Horn County, at bridge on county road, 5 mi (8.0 km) north of Decker.	34.7	1958-76	3- 3-75 2-22-76	3.89 .34	c355 20
06306950	Leaf Rock Creek near Kirby	Lat 45°11'16", long 106°54'50", in center of sec.35, T.7 S., R.39 E., Big Horn County, at culvert on county road, 10 mi (16.1 km) south of Kirby.	6.14	1958-76	1976	--	(h)
06307520	Canyon Creek near Birney	Lat 45°14'28", long 106°40'32", in SW¼ sec.11, T.7 S., R.41 E., Rosebud County, at bridge on county road, 11 mi (18 km) southwest of Birney.	50.2	1972-76	1972 2-16-74 6-18-75 6-14-76	1.05 .25 1.76 2.28	f41 11 100 182
06307620	Tie Creek near Birney	Lat 45°28'21", long 106°31'33", in SW¼ SE¼ sec.22, T.4 S., R.42 E., Rosebud County, at bridge on State Highway 315, 11 mi (18 km) north of Birney.	18.7	1973-76	3-11-76	1.29	5
06307640	Spring Creek near Ashland	Lat 45°33'06", long 106°17'07", in NW¼ sec.27, T.3 S., R.44 E., Rosebud County, at culvert on county road, 3 mi (4.8 km) south of Ashland (discontinued).	1.56	1962-76	6-23-76	10.31	164
06307660	Walking Horse Creek near Ashland	Lat 45°36'23", long 106°17'14", in NW¼ sec.3, T.3 S., R.44 E., Rosebud County, at culvert on county road, 1.5 mi (2.4 km) northwest of Ashland.	3.33	1963-76	9-15-76	.31	1
06307700	Cow Creek near Fort Howes ranger station, near Otter	Lat 45°17'20", long 106°09'14", in SW¼ NW¼ sec.30, T.6 S., R.46 E., Powder River County, at bridge on county road, 0.5 mi (0.8 km) north of Fort Howes, 6.6 mi (10.6 km) north of Otter Creek Post Office.	8.37	1972-76	6-23-76	1.54	6
06307720	Brian Creek near Ashland	Lat 45°24'37", long 106°09'07", in SW¼ SW¼ sec.11, T.5 S., R.45 E., Powder River County, at culvert on county road, 9.3 mi (15.0 km) north of Fort Howes, 13.5 mi (22 km) south of Ashland.	8.03	1973-76	3- 1-75 9-15-76	3.75 e<1.00	c93 1
06307760	Stebbins Creek near Ashland	Lat 45°37'10", long 106°24'35", in center of sec.34, T.2 S., R.43 E., Rosebud County, at culvert on U.S. Highway 212, 7.5 road mi (12.1 km) west of Ashland.	5.41	1963-76	4-15-76	e<.28	1
06307780	Stebbins Creek at mouth, near Ashland	Lat 45°38'27", long 106°17'34", in NW¼ sec.27, T.2 S., R.44 E., Rosebud County, at bridge on county road, 3.5 mi (5.6 km) northwest of Ashland.	19.9	1963-76	9- 7-76	1.64	18

See footnotes at end of table, p. 734

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station Name	Location	Drainage area (sq mi)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (cfs)
		YELLOWSTONE RIVER BASIN--CONTINUED					
06307930	Jack Creek near Volborg	Lat 46°04'55", long 105°51'08", in NE¼ NW¼ sec.26, T.4 N., R.47 E., Custer County, at bridge on State Highway 332, 19 mi (31 km) northwest of Volborg.	5.47	1973-76	6-15-76	2.82	225
06308100	Sixmile Creek tributary near Epsie	Lat 45°31'27", long 105°45'10", in SW¼ SW¼ sec.36, T.3 S., R.48 E., Powder River County, at culvert on U.S. Highway 212, 5.2 mi (8.4 km) northwest of Epsie.	.24	1973-76	1-18-76	2.05	2
06308200	Basin Creek tributary near Volborg	Lat 45°53'11", long 105°41'12", in NW¼ sec.31, T.2 N., R.49 E., Custer County, at culvert on county road, 3.5 mi (5.6 km) north of Volborg.	.14	1955-76	2- 1-76	1.13	14
06308330	Deer Creek tributary near Volborg	Lat 46°02'04", long 105°31'15", in extreme southwest corner of sec.4, T.3 N., R.50 E., Custer County, at culvert on county road, 16 mi (26 km) northeast of Volborg.	1.65	1973-76	6- 7-76	4.80	96
06308340	La Grange Creek near Volborg	Lat 46°06'17", long 105°33'20", in NE¼ NW¼ sec.18, T.4 N., R.50 E., Custer County, at culvert near mile post 27 on U.S. Highway 312, 19 mi (31 km) north of Volborg.	3.66	1973-76	5- 6-75 5- 5-76	7.62 2.15	c378 28
06309020	Rock Springs Creek tributary at Rock Springs	Lat 46°49'07", long 106°14'56", in SE¼ sec.1, T.12 N., R.43 E., Rosebud County, at culvert on State Highway 22, 0.4 mi (0.6 km) northwest of Rock Springs.	.96	1963-76	6-14-76	1.73	23
06309040	Dry House Creek near Angela	Lat 46°41'14", long 106°10'28", in SE¼ SW¼ sec.22, T.11 N., R.44 E., Rosebud County, near bridge on State Highway 22, 3.2 mi (5.1 km) south of Angela.	38.6	1963-76	6-15-76	2.08	35
06309060	North Sunday Creek tributary No. 2 near Angela	Lat 46°34'00", long 106°03'51", in NE¼ sec.4, T.9 N., R.45 E., Custer County, at culvert on State Highway 22, 13 mi (20.9 km) southeast of Angela.	.34	1962-76	7-10-76	1.93	30
06309078	Tree Creek near Kinsey (formerly published as Tree Coulee.)	Lat 46°33'17", long 105°47'48", in NE¼ NW¼ sec.10, T.9 N., R.47 E., Custer County, at culvert on county road, 6.5 mi (10.5 km) west of Kinsey.	4.13	1972 1974-76	6-14-76	6.85	300
06309080	Deep Creek near Kinsey	Lat 46°33'25", long 105°37'12", in SE¼ SE¼ sec.1, T.9 N., R.48 E., Custer County, at culvert on Interstate Highway 94 and U.S. Highway 10, 2 mi (3.2 km) southeast of Kinsey.	11.5	1962-76	7- 8-76	3.68	250
06309090	Ash Creek near Locate	Lat 46°21'57", long 105°29'48", in center of N½ sec.17, T.7 N., R.50 E., Custer County, at wooden culvert on State Highway 333, 10 mi (16.1 km) southwest of Locate (discontinued).	6.23	1962-76	2-23-76	a2.43	b5
06324700	Sand Creek near Broadus	Lat 45°25'48", long 105°26'28", in SE¼ sec.5, T.5 S., R.51 E., Powder River County, at culverts on Moorhead road, 1.8 mi (2.9 km) southwest of Broadus.	10.6	1955-76	1-28-76	1.97	23
06324995	Badger Creek at Biddle	Lat 45°04'43", long 105°21'42", in NW¼ SE¼ sec.4, T.9 S., R.52 E., Powder River County, at culvert on State Highway 59, 0.2 mi (0.3 km) south of Biddle.	6.06	1972-76	6-23-76	7.97	414
06325400	East Fork Little Powder River tributary near Hammond	Lat 45°18'04", long 105°05'50", in NW¼ SE¼ sec.22, T.6 S., R.54 E., Powder River County, at culvert on State Highway 212, 10 mi (16 km) northwest of Hammond.	3.45	1974-76	6-23-76	6.18	155

See footnotes at end of table, p. 734

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station Name	Location	Drainage area (sq mi)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (cfs)
		YELLOWSTONE RIVER BASIN--CONTINUED					
06325700	Powder River tributary near Powderville	Lat 45°48'46", long 105°03'51", in NE¼ NE¼ sec.25, T.1 N., R.53 E., Custer County, at culvert on county road, 4.5 mi (7.2 km) north of Powderville.	3.20	1973-76	6-14-76	3.30	55
06325950	Cut Coulee near Mizpah	Lat 46°08'38", long 105°10'05", in NE¼ SW¼ sec.36, T.5 N., R.52 E., Custer County, at culvert on county road, 8.5 mi (13.7 km) southeast of Mizpah.	2.23	1973-76	9-14-76	4.18	105
06326400	Meyers Creek near Locate	Lat 46°23'17", long 105°16'43", in SE¼ sec.1, T.7 N., R.51 E., Custer County, at culvert on county road on east side of Powder River, 3 mi (4.8 km) southeast of Locate (discontinued).	9.42	1962-76	5- 5-75 8- 5-76	7.50 5.45	310 160
06326510	Locate Creek tributary near Locate	Lat 46°25'52", long 105°10'51", in SW¼ SE¼ sec.23, T.8 N., R.52 E., Custer County, at culvert on U.S. Highway 12, 5.5 mi (8.9 km) east of Locate.	.91	1973-76	8- 5-76	5.31	(d)
06326550	Cherry Creek tributary near Terry	Lat 46°51'18", long 105°20'26", in NE¼ SW¼ sec.25, T.13 N., R.50 E., Prairie County, at bridge on abandoned part of State Highway 253, 4.8 mi (7.7 km) north of Terry.	2.52	1973-76	8- 4-76	3.27	81
06326580	Lame Jones Creek tributary near Willard	Lat 46°11'40", long 104°33'05", in SE¼ SE¼ sec.11, T.5 N., R.57 E., Fallon County, at culvert on county road, 8.8 mi (14.2 km) west of Willard.	.49	1974-76	1976	--	(h)
06326600	O'Fallon Creek near Ismay	Lat 46°25'17", long 104°45'40", near center of east edge of sec.30, T.8 N., R.56 E., Fallon County, at bridge on U.S. Highway 12, 6.5 mi (10.5 km) southeast of Ismay (discontinued).	669	1962-76	7- 3-76	9.50	4,700
06326650	O'Fallon Creek tributary near Ismay	Lat 46°25'10", long 104°44'22", in SE¼ sec.29, T.8 N., R.56 E., Fallon County, at culvert on U.S. Highway 12, 7 mi (11.3 km) southeast of Ismay (discontinued).	.17	1962-76	7- 3-76	5.29	59
06326700	Deep Creek near Baker	Lat 46°18'58", long 104°18'00", in SW¼ sec.2, T.6 N., R.59 E., Fallon County, at culverts on State Highway 7, 5 mi (8.0 km) south of Baker (discontinued).	1.55	1962-76	6-14-76	2.60	83
06326800	Pennel Creek near Baker	Lat 46°29'57", long 104°14'17", in center of south edge of sec.36, T.9 N., R.59 E., Fallon County, at culvert on State Highway 7, 8 mi (12.9 km) north of Baker.	1.00	1962-76	5- 6-75 7- 3-76	2.61 2.39	c38 33
06326900	Yellowstone River tributary No. 4 near Fallon	Lat 46°51'43", long 105°06'33", in SW¼ sec.23, T.13 N., R.52 E., Prairie County, at culvert on Interstate Highway 94 and U.S. Highway 10, 2 mi (3.2 km) north of Fallon (discontinued).	.67	1962-76	8- 4-76	.67	40
06326940	Spring Creek tributary near Fallon	Lat 46°48'06", long 104°59'25", in NE¼ NE¼ sec.13, T.12 N., R.53 E., Prairie County, at culvert on county road, 6.8 mi (10.9 km) southeast of Fallon.	3.10	1972-76	7- 3-76	5.15	125
06326950	Yellowstone River tributary No. 5 near Marsh	Lat 46°57'11", long 104°53'53", in SW¼ sec.21, T.14 N., R.54 E., Dawson County, at culvert on Interstate Highway 94 and U.S. Highway 10, 2.4 mi (3.9 km) northeast of Cracker Box Creek, 5 mi (8.0 km) northeast of Marsh.	.87	1962-76	5- 6-75 2-17-76	2.57 2.51	c36 35
06326960	Timber Fork Creek tributary near Lindsay	Lat 47°10'55", long 105°10'16", in SW¼ SW¼ sec.36, T.17 N., R.51 E., Dawson County, at culvert on county road, 3.3 mi (5.3 km) southwest of Lindsay.	1.23	1974-76	3-18-76	1.24	6
06327550	South Fork Horse Creek tributary near Wibaux	Lat 46°48'09", long 104°22'55", in SW¼ SE¼ sec.11, T.17 N., R.51 E., Wibaux County, at culvert on county road, 16.0 mi (25.7 km) southwest of Wibaux.	1.73	1973-76	1973 3-20-75 4-16-76	6.23 2.90 3.62	cf169 c36 63

See footnotes at end of table, p. 734

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station Name	Location	Drainage area (sq mi)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (cfs)
		YELLOWSTONE RIVER BASIN--CONTINUED					
06327720	Griffith Creek tributary near Glendive	Lat 47°06'20", long 104°35'48", in NE¼ NW¼ sec.35, T.16 N., R.56 E., Dawson County, at culvert on Interstate Highway 94, 0.5 mi (0.8 km) east of Glendive.	3.48	1965 1974-76	5- 6-75 7- 2-76	2.70 6.01	c17 190
06327790	Krug Creek tributary No. 2 near Wibaux	Lat 47°00'23", long 104°18'13", in NW¼ NW¼ sec.6, T.14 N., R.59 E., Wibaux County, at culvert on county road at Interstate Highway 94 interchange, 5.5 mi (8.9 km) west of Wibaux.	.49	1974-76	2- 9-76	2.18	16
06328100	Yellowstone River tributary No. 6 near Glendive	Lat 47°09'26", long 104°39'14", in NW¼ SW¼ sec.8, T.16 N., R.56 E., Dawson County, at bridge on county road to Belle Prairie, 3 mi (4.8 km) northeast of Glendive.	2.93	1974-76	8- 8-74 4-14-75 6- 7-76	1.35 1.18 2.03	9 3 135
06328400	Thirteenmile Creek tributary near Bloomfield	Lat 47°24'46", long 104°49'58", in SE¼ SE¼ sec.9, T.19 N., R.54 E., Dawson County, at culvert on county road, 3.9 mi (6.3 km) east of Bloomfield.	.67	1972	7- 2-76 1974-76	3.03	59
06329350	Alkali Creek tributary near Sidney	Lat 47°30'34", long 104°07'03", in SW¼ NE¼ sec.7, T.20 N., R.60 E., Richland County, at culvert on county road, 14.2 mi (22.8 km) southeast of Sidney.	.49	1974-76	8-10-74 2-15-76	1.45 2.14	c9 22
06329510	Fox Creek tributary near Lambert	Lat 47°38'58", long 104°36'52", in NW¼ SW¼ sec.24, T.22 N., R.55 E., Richland County, at bridge on county road, 2.2 mi (3.5 km) south of Lambert.	5.07	1972 1974-76	1972 6-21-74 5- 6-75 2-16-76	5.18 2.52 3.21 --	(d) (d) (d) 3
06329570	First Hay Creek near Sidney	Lat 47°50'08", long 104°16'16", in SE¼ sec.16, T.24 N., R.58 E., Richland County, at bridge on State Highway 16, 4.1 road mi (6.6 km) north of "dry-land Crop and Soils Research Station" sign, 10 mi (16.1 km) northwest of Sidney.	29.1	1963-76	6-14-76	2.93	700
		LITTLE MISSOURI RIVER BASIN					
06333850	North Creek near Alzada	Lat 45°04'03", long 104°32'03", in SE¼ NW¼ sec.7, T.9 S., R.59 E., Carter County, 8 mi (12.9 km) northwest of Alzada.	0.68	1951‡ 1955-76	6-18-73 4-18-75 6-14-76	c4.37 c4.25 4.31	c270 c230 245
06334100	Wolf Creek near Hammond	Lat 45°09'53", long 104°45'20", in SE¼ sec.5, T.8 S., R.57 E., Carter County, at culvert on U.S. Highway 212, 8 mi (12.9 km) southeast of Hammond.	9.09	1955-76	6-14-76	5.54	535
06334330	Little Missouri River tributary near Albion	Lat 45°12'42", long 104°15'41", in SW¼ NW¼ sec.21, T.7 S., R.61 E., Carter County, at culvert on FAS Route 270, 1.8 mi (2.9 km) north of Albion.	.74	1973-76	(g) 3-25-75 2-14-76	4.50 2.41 1.55	c57 c15 2
06334610	Box Elder Creek tributary near Albion	Lat 45°23'20", long 104°28'38", in SE¼ sec.19, T.5 S., R.59 E., Carter County, at culvert on State Highway 323, 17 mi (27 km) northwest of Albion.	.73	1973-76	6-14-76	4.76	50
06334625	Coal Creek near Mill Iron	Lat 45°54'15", long 104°21'42", in NW¼ SW¼ sec.26, T.2 N., R.59 E., Carter County, at culvert on county road, 8 mi (13 km) northwest of Mill Iron.	.74	1974-76	6-23-76	e<1.48	1
06334640	North Fork Coal Bank Creek near Mill Iron	Lat 45°56'35", long 104°05'28", in SW¼ sec.12, T.2 N., R.61 E., Fallon County, at bridge on county road, 9 mi (14.5 km) northeast of Mill Iron (discontinued).	15.0	1962-76	6-23-76	.41	60
06334720	Soda Creek tributary near Webster	Lat 46°00'34", long 104°05'30", in NE¼ sec.23, T.3 N., R.61 E., Fallon County, at culvert on county road, 0.3 mi (0.5 km) south of Soda Creek, 8 mi (12.9 km) southeast of Webster.	2.22	1962-76	2-26-76	1.36	5

See footnotes at end of table, p. 734

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station Name	Location	Drainage area (sq mi)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (cfs)
Part 12		KOOTENAI RIVER BASIN					
12300400	Cayuse Creek near Trego	Lat 48°36'33", long 115°01'42", in SW¼ SW¼NE¼ sec.24, T.33 N., R.27 W., Lincoln County, at culvert on Forest Service road, 9.8 mi (15.8 km) southwest of Trego.	5.29	1972-76	4-12-76	1.49	82
12300800	Deep Creek near Fortine	Lat 48°45'41", long 114°52'32", in SW¼ sec.30, T.35 N., R.25 W., Lincoln County, at culvert on county road, 1.2 mi (1.9 km) east of Fortine.	18.9	1959-76	5-11-76	2.45	110
12301993	Wolf Creek tributary near Libby	Lat 48°23'52", long 114°55'05", in NW¼ NE¼NE¼ sec.4, T.30 N., R.26 W., Lincoln County, at Burlington Northern railroad culvert, 0.3 mi (0.5 km) upstream from mouth, 28.8 mi (46.3 km) east of Libby.	2.76	1974-76	4-12-76	.54	13
12301997	Richards Creek near Libby	Lat 48°15'31", long 115°11'57", in SE¼ NW¼SE¼ sec.20, T.29 N., R.28 W., Lincoln County, at bridge on county road, 0.1 mi (0.2 km) upstream from mouth, 18.5 mi (30 km) southeast of Libby.	9.50	1973-76	5-11-76	.90	24
12302400	Shaughnessy Creek near Libby	Lat 48°18'11", long 115°35'37", in W½ sec.5, T.29 N., R.31 W., Lincoln County, at culvert on county road, 6.5 mi (10.5 km) southwest of Libby.	1.16	1959-76	12-5-76	--	b15
12303400	Ross Creek near Troy	Lat 48"12'26", long 115°52'08", in SE¼ NE¼ sec.8, T.28 N., R.33 W., Lincoln County, at bridge on Forest Service road, 11.3 mi (18 km) north of Heron, 17.5 mi (28 km) south of Troy at site of water-quality station.	23.8	1973-76	12-5-75	4.61	1,180
12303440	Camp Creek near Troy	Lat 48°18'46", long 115°50'35", in SW¼ SE¼ sec.32, T.30 N., R.33 W., Lincoln County, at bridge on Forest Service road, 12.6 mi (20.3 km) south of Troy.	11.3	1972-76	5-11-76	1.64	190
12304060	Blacktail Creek near Yaak	Lat 48°57'03", long 115°32'27", in SW¼ SW¼ sec.20, T.37 N., R.30 W., Lincoln County, at bridge on Forest Service road, 200 ft (61 m) upstream from mouth, 10.3 mi (16.6 km) northeast of Yaak.	8.66	1964 1972-76	5-11-76	1.42	112
12304120	Zulu Creek near Yaak	Lat 48°43'49", long 115°38'30", in NW¼ NW¼ sec.8, T.34 N., R.31 W., Lincoln County, at culvert on South Fork Yaak River road, 8.5 mi (13.7 km) south of Yaak.	5.27	1972-76	5-11-76	1.38	67
12304300	Cyclone Creek near Yaak	Lat 48°45'01", long 115°54'06", in SE¼ sec.32, T.35 N., R.33 W., Lincoln County, at bridge 0.2 mi (0.3 km) upstream from mouth, 10.5 mi (16.9 km) southwest of Yaak.	5.71	1960-76	5-11-76	1.63	165
		PEND OREILLE RIVER BASIN					
12323300	Smith Gulch near Silver Bow	Lat 45°57'26", long 112°39'45", in N½ sec.1, T.2 N., R.9 W., Silver Bow County, at culvert on Interstate Highway 15 and U.S. Highway 91, 4 mi (6.4 km) south of Silver Bow.	4.36	1959-76	3-17-76	a4.78	23
12324250	Cottonwood Creek at Deer Lodge	Lat 46°23'59", long 112°43'02", in NE¼ SW¼ sec.33, T.8 N., R.9 W., Powell County, at culverts on county road and U.S. Highway 10 in Deer Lodge.	45.4	1975-76	6-19-75 5-15-76	4.10 3.00	497 240
12324700	Clark Fork tributary near Drummond	Lat 46°36'58", long 113°02'08", in SW¼ sec.18, T.10 N., R.11 W., Powell County, 0.5 mi (0.8 km) upstream from Interstate Highway 90 and U.S. Highway 10, 6.5 mi (10.5 km) east of Drummond.	4.61	1958-76	12-2-75	1.86	108

See footnotes at end of table, p. 734

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station Name	Location	Drainage area (sq mi)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (cfs)
		PEND OREILLE RIVER BASIN--CONTINUED					
12331700	Edwards Gulch at Drummond	Lat 46°40'25", long 113°08'31", in SW¼ SW¼ sec.29, T.11 N., R.12 W., Granite County, at culvert on private road, 0.4 mi (0.6 km) north of Interstate Highway 90 and U.S. Highway 10 at Drummond (discontinued).	4.69	1960-62 1975-76	1-19-76	a1.95	8
12338600	Monture Creek at Forest Service boundary, near Ovando	Lat 47°05'37", long 113°09'10", in SW¼ SW¼ sec.32, T.16 N., R.12 W., Powell County, 800 ft (240 m) upstream Forest Service boundary, 5.2 mi (8.4 km) north of Ovando.	105	1964 1974-76	6-22-76	3.35	1,300
12339300	Deer Creek near Seeley Lake	Lat 47°12'37", long 113°32'27", in SE¼ SW¼ sec.20, T.17 N., R.15 W., Missoula County, at bridge on county road, 3.5 mi (5.6 km) northwest of Seeley Lake.	19.8	1974-76	5- 5-76	3.04	340
12339900	West Twin Creek near Bonner	Lat 46°54'44", long 113°42'50", in SW¼ sec.2, T.13 N., R.17 W., Missoula County, at bridge on State Highway 200, 8 mi (12.9 km) east of Bonner.	7.33	1959-76	6-11-76	1.15	114
12342950	Trapper Creek near Conner	Lat 45°53'43", long 114°10'51", in SE¼ SE¼ sec.27, T.2 N., R.21 W., Ravalli County, at bridge on State Highway 473, 4.5 mi (7.2 km) southwest of Conner.	28.5	1974-76	6-12-75 5-11-76	2.02 1.97	c460 440
12344300	Burke Gulch near Darby	Lat 46°01'28", long 114°08'45", in S½ sec.12, T.3 N., R.21 W., Ravalli County, 1 mi (1.6 km) upstream from mouth, 1.5 mi (2.4 km) east of Darby.	6.28	1958-76	5-14-76	2.20	24
12353250	Ninemile Creek near Alberton	Lat 47°11'09", long 114°35'13", in SE¼ SE¼ sec.36, T.17 N., R.24 W., Missoula County, 400 ft (122 m) upstream from large right bank diversion, 14.2 mi (22.8 km) northwest of Alberton.	50.2	1972 1974-76	5-11-76	2.21	480
12353800	Thompson Creek near Superior	Lat 47°11'55", long 114°55'00", in SW¼ sec.28, T.17 N., R.26 W., Mineral County, 1.2 mi (1.9 km) west of Superior.	11.8	1961-76	5-11-76	1.15	100
12355350	Big Creek at Big Creek ranger station, near Columbia Falls	Lat 48°36'07", long 114°09'55", in SW¼ SW¼ sec.22, T.33 N., R.20 W., Flathead County, Flathead National Forest, at Big Creek ranger station, 0.4 mi (0.6 km) upstream from mouth, 16.0 mi (25.7 km) north of Columbia Falls.	82.1	1964 1973-76	5-11-76	5.00	1,450
12356500	Bear Creek near Essex	Lat 48°16'56", long 113°25'23", in SE¼ NW¼NE¼ sec.16, T.29 N., R.14 W., Flathead County, 1.1 mi (1.8 km) upstream from bridge on U.S. Highway 2, 8.5 mi (13.7 km) northeast of Essex.	20.4	1946-52‡ 1964 1975-76	5-10-76	5.10	520
12369250	Holland Creek near Condon	Lat 47°26'20", long 113°40'11", in NE¼ NW¼ sec.5, T.19 N., R.16 W., Missoula County, at bridge on State Highway 209, 6.8 mi (10.9 km) south of Condon.	22.3	1974-76	5-11-76	2.02	230
12370500	Dayton Creek near Proctor	Lat 47°54'59", long 114°20'14", in NW¼ sec.20, T.25 N., R.21 W., Lake County, at culvert on county road, 2.5 mi (4.0 km) northwest of Proctor.	18.5	1959-76	4- 6-76	1.24	35
12389150	McGregor Creek tributary near Marion	Lat 48°01'44", long 114°55'54", in NW¼ NE¼ sec.10, T.26 N., R.26 W., Flathead County, 250 ft (76 m) upstream from Forest Service Road, 0.4 mi (0.6 km) upstream from mouth, 13.4 mi (21.7 km) southwest of Marion.	2.55	1972-76	5-11-76	e<.99	b12
12391100	White Pine Creek near Trout Creek	Lat 47°44'19", long 115°40'27", in SW¼ SW¼NW¼ sec.23, T.23 N., R.32 W., Sanders County, Kaniksu National Forest, at bridge, 7.5 mi (12.1 km) southwest of Trout Creek.	8.75	1974-76	12-4-75	4.80	310

See footnotes at end of table, p. 734

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station Name	Location	Drainage area (sq mi)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (cfs)
		PEND OREILLE RIVER BASIN--CONTINUED					
12391200	Canyon Creek near Trout Creek	Lat 47°51'16", long 115°29'57", in SW¼ NW¼ sec.7, T.25 N., R.30 W., Sanders County, at bridge on Forest Service road, 4.6 mi (7.4 km) northeast of Trout Creek.	8.64	1972 1974-76	5-11-76	2.53	200
12391430	Skelton Creek near Noxon	Lat 47°57'47", long 115°53'18", in SW¼ SW¼ sec.32, T.26 N., R.33 W., Sanders County, at culvert on Forest Service road, 0.4 mi (0.6 km) upstream from West Fork Pilgrim Creek, 5.7 mi (9.2 km) southwest of Noxon.	2.10	1973-76	5-11-76	1.75	39
12391525	Snake Creek near Noxon	Lat 48°07'24", long 115°45'10", in SW¼ SW¼ sec.5, T.27 N., R.32 W., Sanders County, at culvert on Forest Service road, 9.0 mi (14.5 km) north of Noxon.	3.11	1972-76	12-4-75	2.41	52

‡ Operated as a continuous-record station.
a Backwater from ice.
b About.
c Revised.
d Not determined.
e Peak discharge did not reach bottom of gage.
f Prior to installation of gage.
g Year and date unknown.
h No evidence of flow during year.

Measurements at miscellaneous sites

Measurements of streamflow at points other than gaging stations are given in the following table. Those that are measurements of base flow are designated by an asterisk (*); measurements of peak flow by a dagger (†).

Discharge measurements made at miscellaneous sites during water year 1976

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements Date	Measurements Discharge (cfs)
		Saskatchewan River basin				
Crooked Creek 490736113484501	Waterton River	Lat 49°07'36", long 113°48'45", in NE¼ sec. 16, T.2, R.29 W., fourth meridian, in Alberta, 7 mi (11 km) northeast of Waterton Park.	24.1	1949-1975	10-16-75	18.2
					6-14-76	15.3
					7-14-76	6.99
					8-17-76	7.5
		Spring directly tributary to Beaverhead River				
Gordon Spring 450018112510701	Beaverhead River	Lat 45°00'18", long 112°51'07", in NW¼ SE¼ sec.32, T.9 S., R.10 W., Beaverhead County, at culvert in old railroad grade, just downstream from Clark Canyon Dam, 10.5 mi (16.9 km) east of Grant.		1962 1964-75	10- 1-75	31.8
					8- 6-76	29.6
					9- 2-76	27.3
		Madison River basin				
Madison River 06040000	Jefferson River	Lat 45°14'00", long 111°45'00", at center of south line of sec.8, T.7 S., R.1 W., Madison County, 30 ft (9 m) downstream from Varney Bridge, 1.8 mi (2.9 km) downstream from Wigwam Creek, 4.1 mi (6.6 km) northwest of Cameron, at site of former gaging station.	1,669	1951-58‡ 1959-63‡ 1968-70‡ 1965-66 1973	6- 2-76	3,320
					7- 1-76	2,180
					8- 4-76	1,510
					9- 2-65	1,300
Madison River 455405111312901	Jefferson River	Lat 45°54'05", long 111°31'29", in SE¼ NE¼NW¼ sec.30, T.2 N., R.2 E., Gallatin County, at bridge on U.S. Highway 10, 1.5 mi (2.4 km) east of Three Forks, about 3 mi (5 km) upstream from mouth.			5-11-76	3,880
					5-25-76	4,150
					6-28-76	2,550
					8- 2-76	1,750
					8-30-76	1,690
		Gallatin River basin				
Bridger Creek 06048500	East Gallatin River	Lat 45°42'20", long 110°57'40", in NE¼ SE¼ sec.34, T.1 S., R.6 E., on right bank 3.6 mi (6.5 km) upstream from mouth, 3.5 mi (6.3 km) northeast of Bozeman at site of former gaging station.	62.5	1945-69‡ 1970	4-23-76	83.3
East Gallatin River 454331111035601	Gallatin River	Lat 45°43'41", long 111°09'56", in NW¼ SE¼NE¼ sec.26, T.1 S., R.5 E., Gallatin County, at bridge on State Secondary Highway 411, 1 mi (2 km) downstream from Bridge Creek, 1.5 mi (2.4 km) northwest of Bozeman.		1952 1972	5-12-76	1,240
					5-26-76	621
					6-29-76	329
					8- 3-76	142
					8-31-76	82.5
East Gallatin River 455227111135401	Gallatin River	Lat 45°52'27", long 111°13'54", in NW¼ NW¼NE¼ sec.4, T.1 N., R.4 E., Gallatin County, at bridge on State Secondary Highway 346, 1 mi (2 km) downstream from Dry Creek, 3.5 mi (5.6 km) east of Manhattan.			5-12-76	1,460
					5-26-76	1,160
					6-29-76	758
					8- 3-76	399
					8-31-76	339
		Prickly Pear Creek basin				
Last Chance Gulch 463603112020201	Tenmile Creek	Lat 46°36'03", long 112°02'02", in NE¼ NW¼ sec.30, T.10 N., R.3 W., Lewis and Clark County, at city drain outlet east of Carroll College, 0.2 mi (0.4 km) above railroad tracks in Helena.			6- 6-76	†a250
		Missouri River main stem				
Missouri River 06074000	Mississippi River	Lat 47°16'10", long 111°41'45", in NW¼ SE¼ sec.35, T.18 N., R.1 W., Cascade County, on downstream side of county bridge at Cascade, 26 mi (42 km) upstream from Smith River.	18,493	1902-15‡ 1967	5-27-76	17,100
		Smith River basin				
Smith River 472332111265501	Missouri River	Lat 47°23'32", long 111°26'55", on section line between SW¼SW¼ sec.14, and NW¼NW¼ sec.23, T.19 N., R.2 E., Cascade County, at county bridge on Highway 330 approximately 3 mi (5 km) above mouth.			5-27-76	1,550

See footnotes at end of table, p. 743

Discharge measurements made at miscellaneous sites during water year 1976

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements Date	Measurements Discharge (cfs)
		Redwater River basin				
Horse Creek 472529105365400 1	Redwater River	Lat 47°25'29", long 105°36'54", in NW¼ NW¼ sec.9, T.19 N., R.48 E., McCone County, at bridge on county road, 1 mi (2 km) west of Circle.			7-22-76	†b106
Horse Creek 472530105343301	Redwater River	Lat 47°25'30", long 105°34'33", in NE¼ NW¼ sec.11, T.19 N., R.48 E., McCone County, at culvert just north of intersection of Highways 13 and 200, at Circle.	104		7-22-76	†c101
Lost Creek 472919105320001	Redwater River	Lat 47°29'19", long 105°32'00", in SE¼ SE¼ sec.13, T.20 N., R.48 E., McCone County, at bridge on FAP 13, 6.5 mi (10.5 km) north of Circle.			7-22-76	†a1,480
South Fork Buffalo Creek 473154105320001	Redwater River	Lat 47°31'54", long 105°32'00", in SE¼SE¼ sec.34, T.21 N., R.48 E., McCone County, at bridge on FAP 13, 9 mi (15 km) north of Circle.	11.6		7-22-76	†b10,800
		Poplar River basin				
Coal Creek 485834105413701	Poplar River	Lat 48°58'34", long 105°41'37", in SE¼NE¼ sec.8, T.37 N., R.46 E., Daniels County, 0.5 mi (0.8 km) upstream from mouth, 12 mi (19 km) northwest of Four Buttes.		1975	11- 4-75	0.96
Poplar River 06178150 (previously published as "Middle Fork Poplar River")	Missouri River	Lat 48°52'23", long 105°29'50", in NE¼SE¼ sec.13, T.36 N., R.47 E., 200 ft (161 m) upstream from county road crossing, 6.4 mi (10.3 km) northwest of Scobey at site of water-quality station.	572	1975	10- 6-75 10-14-75 10-28-75 11-25-75 1-20-76 3-17-76 4-20-76 5-19-76 7- 7-76 8- 3-76 9- 7-76	5.46 9.08 8.95 7.98 6.20 11.9 28.6 8.12 128 5.1 2.0
East Fork Poplar River 485955105243201	Poplar River	Lat 48°59'55", long 105°24'32", in NE¼NE¼ NE¼ sec. 5, T.37 N., R.48 E., Daniels County, 150 ft (45.7 m) south of international boundary at U.S. East Poplar Port of Entry, 14 mi (23 km) north of Scobey.			9-27-76	2.52
East Fork Poplar River 485607105260301	Poplar River	Lat 48°56'07", long 105°26'03", in NW¼SE¼ NE¼ sec.30, T.37 N., R.48 E., Daniels County, 2 mi (3.2 km) downstream from Outlet Creek, 2 mi (3 km) upstream from State Highway 13 bridge, 9.5 mi (15.3 km) north of Scobey.			9-27-76	2.78
East Fork Poplar River 485343105235501	Poplar River	Lat 48°53'43", long 105°23'55", in NE¼ NE¼NW¼ sec.11, T.36 N., R.48 E., Daniels County, 1.5 mi (2.4 km) upstream from Shannon Coulee, 1.5 mi (2.4 km) downstream from State Highway 13 bridge, 7 mi (11 km) north of Scobey.			9-27-76	3.37
East Fork Poplar River 485110105250901	Poplar River	Lat 48°51'10", long 105°25'09", in NW¼ NW¼NE¼ sec.27, T.36 N., R.48 E., Daniels County, 200 ft (61.0 km) upstream from State Highway 13 bridge, 4 mi (6 km) north of Scobey.			9-27-76	3.07
Poplar River 483440105222601	Missouri River	Lat 48°34'40", long 105°22'26", in NW¼NE¼ sec.36, T.33 N., R.48 E., Daniels County, at bridge on county road, 0.5 mi (0.8 km) downstream from Nielson Coulee, 6.0 mi (9.7 km) northwest of Bredette.		1975	10-16-75 10-30-75 11-25-75	23.7 22.6 20.4
Poplar River 06179200	Missouri River	Lat 48°33'05", long 105°21'55", in NW¼SW¼ SW¼ sec.4, T.32 N., R.49 E., Roosevelt County, on county road bridge, 3.8 mi (6.1 km) upstream from West Fork, 4.4 mi (7.1 km) northwest of Bredette at site of water-quality station.			7- 9-76 8- 5-76 9- 8-76	d300 45 15

See footnotes at end of table, p. 743

Discharge measurements made at miscellaneous sites during water year 1976

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements Date	Measurements Discharge (cfs)
		Poplar River basin--Continued				
West Fork Poplar River 06179500	Poplar River	Lat 49°00'00", long 106°22'00", in SE¼ sec.5, T.1 R.3 W., third meridian, at West Poplar Canadian Customs Post, 100 ft (30.5 m) north of international boundary, 6 mi (10 km) upstream from Roanwood Coulee, 10 mi (16 km) north of Opheim at site of former international gaging station.	139	1931-52‡ 1975	7- 7-65	0.55
					8- 2-76	.30
					9- 7-76	.14
West Fork Poplar River 06180200	Poplar River	Lat 48°37'27", long 105°39'18", in SE¼ SE¼ sec.11, T.33 N., R.46 E., Daniels County, on county road crossing, 0.9 mi (1.4 km) south of Fort Peck Indian Reservation boundary, 6.8 mi (10.9 km) upstream from Cottonwood Creek, 12.4 mi (20.0 km) southwest of Four Buttes at site of water-quality station.	732	1975	10-15-75	11.2
					10-30-75	10.1
					11-25-75	8.10
					1-21-76	1.66
					3-17-76	2.12
					4-20-76	23.2
					5-19-76	6.52
West Fork Poplar River 06180400	Poplar River	Lat 48°33'01", long 105°25'42", in NE¼ SW¼SW¼ sec.1, T.32 N., R.48 E., Roosevelt County, at bridge on State Highway 13, 16 mi (26 km) south of Scobey at site of water-quality station.		1954	7- 8-76	150
					8- 5-76	5.8
					9- 8-76	3.1
		Diamond Creek basin				
Diamond Creek 480930104320501	Missouri River	Lat 48°09'30", long 104°32'05", in SW¼SW¼ SE¼ sec.19, T.28 N., R.56 E., Roosevelt County, above dam 1.2 mi (1.9 km) northwest of Culbertson.			6- 3-76	a2,020
					6-11-76	†a4,080
Diamond Creek 480917104314001	Missouri River	Lat 48°09'17", long 104°31'40", in SW¼NE¼ NE¼ sec.30, T.28 N., R.56 E., Roosevelt County, below dam 1 mi (2 km) northwest of Culbertson.			6-11-76	†a2,730
Diamond Creek 480856104313701	Missouri River	Lat 48°08'56", long 104°31'37", in NW¼NW¼ SW¼ sec.29, T.28 N., R.56 E., Roosevelt County, at culvert on U.S. Highway 2 at Culbertson.	4.0		6-11-76	†a1,320
		Yellowstone River basin				
Lost Boy Creek 465920107571801	Fly Creek	Lat 46°59'20", long 107°57'18", in SE¼SE¼ SW¼ sec.23, T.3 N., R.30 E., Yellowstone County, at county bridge at west edge of Pompeys Pillar, 0.3 mi (0.5 km) upstream from mouth.		1974-75	10-14-75	1.63
					11- 4-75	1.48
					12- 1-75	1.39
					1- 5-76	.66
					2- 6-76	.97
					3- 5-76	.79
					4- 9-76	.86
					4-14-76	.91
					5- 7-76	.77
					6-14-76	13.9
					7- 9-76	3.97
					8- 5-76	2.37
					9-10-76	8.87
Yellowstone River 06294840	Missouri River	Lat 46°15'06", long 107°20'55", in SW¼SE¼ sec.21, T.6 N., R.35 E., Treasure County, at bridge on State Highway 311, 0.4 mi (0.6 km) west of Myers at site of water-quality station.		1971-72 1974-75	10-20-75	9,060
					7-19-76	18,400
					9-20-76	8,480
East Fork Armells Creek 06294980	Yellowstone River	Lat 45°58'42", long 106°38'38", in SE¼SW¼ SW¼ sec.28, T.3 N., R.41 E., Rosebud County, on private road bridge 0.9 mi (1.4 km) downstream from Corral Creek, 6.7 mi (10.8 km) north of Colstrip at site of water-quality station.	155	1975	10-16-75	3.7
					11- 6-75	1.4
					12- 2-75	1.71
					1- 6-76	1.11
					2- 3-76	4.3
					3- 2-76	2.27
					4- 7-76	2.40
					5- 6-76	5.42
					6- 1-76	1.42
					7- 8-76	1.58
					8- 4-76	0
					9- 9-76	0
West Fork Armells Creek 06294991	East Fork Armells Creek	Lat 46°05'10", long 106°46'09", in SW¼SW¼ NW¼ sec.21, T.4 N., R.40 E., Rosebud County, 0.7 mi (1.1 km) upstream from mouth, 13.5 mi (21.7 km) southwest of Forsyth at site of water-quality station.	48.2	1975	10-16-75	.01
					11- 5-75	.03
					12- 2-75	0
					2- 3-76	.8
					3- 2-76	d.5
					4- 7-76	.68
					5- 6-76	2.22
					6- 4-76	.10
					7- 8-76	0
					8- 4-76	0
					9- 9-76	0

See footnotes at end of table, p. 743

Discharge measurements made at miscellaneous sites during water year 1976

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements Date	Measurements Discharge (cfs)
		Yellowstone River basin--Continued				
Yellowstone River 06295000	Missouri River	Lat 46°15'53", long 106°41'43", in SE¼Ne¼ NE¼ sec.22, T.6 N., R.40 E., Rosebud County, at bridge on State Highway 12, 1.4 mi (2.3 km) downstream from Smith Creek, 0.7 mi (1.1 km) northwest of Forsyth at site of water-quality station.	40,339	1921-23‡	11-18-75	9,960
				1974-75	6-15-76	47,600
					8-17-76	9,830
					9-21-76	8,150
Greenleaf Creek 06295350	Rosebud Creek	Lat 45°48'57", long 106°25'08", in NW¼NW¼ NW¼ sec.29, T.1 N., R.43 E., Rosebud County, on county road 0.8 mi (1.3 km) upstream from mouth, 11.0 mi (17.7 km) southeast of Colstrip at site of water-quality station.	30.5	1975	11- 5-75	0
					2- 3-76	0
					4- 8-76	0
					6- 3-76	0
					8- 4-76	0
					9- 8-76	0
Rosebud Creek 06295400	Yellowstone River	Lat 45°53'33", long 106°24'03", in NE¼SE¼ SE¼ sec.29, T.2 N., R.43 E., Rosebud County, on private road bridge, 0.3 mi (0.5 km) upstream from Pony Creek, 11.6 mi (18.7 km) northeast of Colstrip at site of water-quality station.	1,153	1975	10-16-75	37.9
					11-18-75	43.1
					12- 3-75	48.5
					1- 7-76	27.6
					2- 4-76	42.5
					3- 3-76	54.3
					4- 8-76	64.9
					5- 5-76	87.9
					6- 3-76	55.4
					7- 7-76	61.0
					8- 3-76	25.2
					9- 8-76	9.43
Rosebud Creek 06295500	Yellowstone River	Lat 46°06'46", long 106°27'08", in SW¼NE¼ SW¼ sec.12, T.4 N., R.42 E., Rosebud County, on private road bridge, 1 mi (2 km) downstream from Cottonwood Creek, 12 mi (19 km) south of Rosebud at site of water-quality station.	1,215	1938-43‡	10-17-75	37.7
				1944	11-17-75	43.0
				1975	12- 3-75	42.5
					1- 8-76	33.4
					2- 5-76	42.1
					3-23-76	75.1
					4- 6-76	63.1
					5- 4-76	78.8
					6- 2-76	47.5
					7- 7-76	58.1
					8- 3-76	17.5
					9- 8-76	10.1
Decker Mine Effluent 450237106501201	Pond Creek	Lat 45°02'37", long 106°50'12", in NE¼NW¼ SW¼ sec.16, T.9 S., k.40 E., Big Horn County, at Parshall flume, 2.5 mi (6.5 km) northeast of Decker.		1975	10- 7-75	d.2
					12- 2-75	.4
					2- 3-76	.3
					3- 2-76	.4
					5- 4-76	.2
					6- 7-76	.4
					8- 3-76	1.57
					8-31-76	0
Coal Creek 450236106464101	Tongue River Reservoir	Lat 45°02'36", long 106°46'41", in SE¼NE¼ SW¼ sec.13, T.9 S., R.40 E., Big Horn County, at county bridge 4.7 mi (12.2 km) northeast of Decker.			10- 7-75	0
					11-10-75	0
					12- 2-75	0
					2- 3-76	0
					3- 2-76	0
					4- 6-76	0
					5- 4-76	0
					6- 7-76	0
					7- 6-76	0
					8- 2-76	0
					8-31-76	0
Pearson Creek 450429106502601	Tongue River Reservoir	Lat 45°04'29", long 106°50'26", in SW¼NW¼ SE¼ sec.33, T.8 S., R.40 E., Big Horn County, at county road, 4.5 mi (11.7 km) northeast of Decker.		1975	10-07-75	0
					12- 3-75	0
					11-11-75	0
					2- 3-76	0
					3- 2-76	0
					4- 6-76	0
					5- 4-76	0
					6- 8-76	0
					7- 7-76	0
					8- 3-76	0
					8-31-76	0
Deer Creek 06306800	Tongue River Reservoir	Lat 45°03'19", long 106°42'09", in NW¼SW¼ SW¼ sec.10, T.9 S., R.41 E., Big Horn County, at county road bridge, 6.1 mi (9.8 km) upstream from mouth, 8.5 mi (13.7 km) northeast of Decker at site of water-quality station.	38.3	1975	10- 7-75	0
					10-21-75	.06
					12- 2-75	0
					2- 3-76	0
					2-17-76	d.3
					3- 2-76	0
					4- 6-76	0
					5- 4-76	.21
					6- 7-76	0
					7- 6-76	0
					8- 2-76	0
					8-31-76	0

See footnotes at end of table, p. 743

Discharge measurements made at miscellaneous sites during water year 1976

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements Date	Measurements Discharge (cfs)
		Yellowstone River basin--Continued				
Tongue River 450802106460501	Yellowstone River	Lat 45°08'02", long 106°46'05", in SE¼SE¼ NE¼ sec.13, T.8 S., R.40 E., Big Horn County, on apron of Tongue River Dam, 9 mi (15 km) northeast of Decker at mile 198.0 (318.6 km).			11-10-75 11-25-75	33.8 16.2
Tongue River 450918106445201	Yellowstone River	Lat 45°09'18", long 106°44'52", in SE¼SE¼ SE¼ sec.6, T.8 S., R.41 E., Big Horn County, 0.1 mi (0.2 km) upstream from Anderson Creek, 1.5 mi (2.4 km) downstream from station 06 3075 00, 11 mi (18 km) northeast of Decker, at mile 195.8 (315.0 km).			11-11-75	20.9
Four Mile Creek 06307510	Tongue River	Lat 45°12'28", long 106°42'52", in NE¼NW¼ NE¼ sec.28, T.7 S., R.41 E., Rosebud County, on dirt road, 0.9 mi (1.4 km) upstream from mouth, 12.5 mi (20.1 km) southwest of Birney at site of water-quality station.	22.3	1975	10- 8-75 11-11-75 12- 3-75 2- 4-76 3- 3-76 4- 7-76 5- 5-76 6- 9-76 7- 8-76 8- 4-76 9- 1-76	0 0 0 0 0 0 0 0 0 0 0
Tongue River 451259106413601	Yellowstone River	Lat 45°12'59", long 106°41'36", in NE¼SW¼ NE¼ sec.22, T.7 S., R.41 E., Rosebud County, 1 mi (1.6 km) downstream from Fourmile Creek, at Petre Ranch, 17 mi (27 km) northeast of Decker, at mile 184.5 (296.9 km).			11-11-75	20.1
Tongue River 451610106372501	Yellowstone River	Lat 45°16'10", long 106°37'25", in SE¼NE¼ SE¼ sec.31, T.6 S., R.42 E., Rosebud County, at mouth of Prairie Dog Creek, 7 mi (11 km) southwest of Birney, at mile 176.1 (283.3 km).			11-11-75	26.7
Tongue River 451902106312601	Yellowstone River	Lat 45°19'02", long 106°31'26", in NW¼SE¼ SE¼ sec.13, T.6 S., R.42 E., Rosebud County, 1 mi (1.6 km) upstream from Hanging Woman Creek, 1.0 mi (2 km) southwest of Birney, at mile 165.6 (266.3 km).			11-25-75	f33.3
Tongue River 452007106304701	Yellowstone River	Lat 45°20'07", long 106°30'47", in NW¼NE¼ NW¼ sec.7, T.6 S., R.43 E., Rosebud County, 0.2 mi (0.3 km) upstream from Brown Cattle Co. ditch crossing, 0.9 mi (1.4 km) north of Birney, at mile 162.7 (261.8 km).			11-11-75	45.9
Cook Creek 06307615	Tongue River	Lat 45°22'39", long 106°29'45", in SW¼NE¼ NW¼ sec.25, T.5 S., R.42 E., Rosebud County, on dirt road 0.1 mi (0.2 km) upstream from mouth, 3.8 mi (6.1 km) north of Birney at site of water-quality station.	62.6	1975	10- 8-76 11-11-75 12- 3-75 1- 8-76 2- 4-76 3- 3-76 4- 7-76 5- 5-76 6- 9-76 7- 8-76 8- 4-76	.49 .76 1.34 1.64 .90 1.20 1.24 1.43 2.0 .53 .62
Tongue River 452445106272501	Yellowstone River	Lat 45°24'45", long 106°27'25", in NE¼SW¼ SW¼ sec.8, T.5 S., R.43 E., Rosebud County at county bridge at Birney Day School, 7 mi (11 km) northeast of Birney, at mile 151.5 (243.8 km).			11-11-75	39.2
Tongue River 453019106195101	Yellowstone River	Lat 45°30'19", long 106°19'51", in NW¼SE¼ NW¼ sec.8, T.4 S., R.44 E., Rosebud County, 0.5 mi (0.8 km) upstream from King Creek, 7 mi (11 km) at mile 135.6 (218.2 km).			11-12-75	f18.5
Tongue River 453555106164101	Yellowstone River	Lat 45°35'55", long 106°16'41", in SE¼SE¼ SE¼, sec.3, T.3 S., R.44 E., Rosebud County, at bridge on road between Ashland and St. Labre Mission, 0.1 mi (0.2 km) upstream from Otter Creek, at mile 118.3 (190.3).			11-11-75 11-25-75	58.5 f44.9

See footnotes at end of table, p. 743

Discharge measurements made at miscellaneous sites during water year 1976

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements Date	Measurements Discharge (cfs)
		Yellowstone River basin--Continued				
Bear Creek 06307670	Otter Creek	Lat 45°12'20", long 106°12'15", in NW¼NE¼ sec.27, T.7 S., R.45 E., Powder River County, 500 ft (150 m) west of Otter Post Office, 2.6 mi (4.2 km) upstream from mouth at site of water-quality station.	90.4	1975	10-22-75	0
					3-16-76	<.01
					4-20-76	0
					5-18-76	0
					6-16-76	0
					7-20-76	0
					8-17-76	0
Threemile Creek 06307730	Otter Creek	Lat 45°30'46", long 106°09'25", in NW¼SE¼ SE¼ sec.3, T.4 S., R.45 E., Rosebud County, on dirt road 1.5 mi (2.4 km) southeast of Ashland at site of water-quality station.	51.5	1975	10-22-75	0
					4-20-76	0
					7-20-76	0
					8-17-76	0
Home Creek 453232106114301	Otter Creek	Lat 45°32'32", long 106°11'43", in SE¼NE¼ SE¼ sec.29, T.3 S., R.45 E., Powder River County, about 150 ft (45.7 m) west of Otter Creek road culvert, about 2 mi (3 km) south of Highway 212, 5.1 mi (8.2 km) southeast of Ashland.			5-19-76	.12
					6-16-76	d.01
					6-25-76	e.14
					6-29-76	e.08
					7-20-76	d.08
					8-13-76	e.02
					8-16-76	e.02
					9-29-76	.04
Tongue River 454307106173501	Yellowstone River	Lat 45°43'07", long 106°17'35", in SE¼NW¼ SW¼ sec.27, T.1 S., R.44 E., Rosebud County, 0.3 mi (0.5 km) upstream from Lay Creek, 10 mi (16 km) north of Ashland, at mile 103.8 (167.0 km).			11-12-75	f18.6
Tongue River 06307800	Yellowstone River	Lat 45°47'00", long 106°16'10", in SE¼SE¼ NW¼ sec.2, T.1 S., R.44 E., Rosebud County, 2 mi (3 km) upstream from Beaver Creek, 6 mi (10 km) upstream from Brandenberg Bridge, 13 mi (21 km) north of Ashland, at mile 94.2 (151.6 km) at site of former gaging station.	3,830	1966-73‡	11-25-75	f56.5
Beaver Creek 06307810	Tongue River	Lat 45°47'52", long 106°14'17", in NW¼SE¼ NE¼ sec.34, T.1 N., R.44 E., Rosebud County, at county road bridge 0.8 mi (1.3 km) upstream from mouth, 14.7 mi (23.7 km) north of Ashland at site of water-quality station.	92.3	1975	10-23-75	0
					3-17-76	.61
					4-21-76	1.06
					5-11-76	.58
					6-15-76	.89
					7-21-76	0
					8-18-76	0
Liscom Creek 06307840	Tongue River	Lat 45°54'09", long 106°09'51", in SE¼NW¼ NW¼ sec.27, T.2 N., R.45 E., Custer County, at county road bridge 0.8 mi (1.3 km) upstream from mouth, 21 mi (34 km) northeast of Ashland at site of water-quality station.	47.6	1975	10- 8-75	0
					10-23-75	0
					5-19-76	0
					6-15-76	0
Tongue River 455528106083501	Yellowstone River	Lat 45°55'28", long 106°08'35", in SE¼NW¼ SW¼ sec.16, T.2 N., R.45 E., Custer County, 0.3 mi (0.5 km) downstream from S-H diversion dam 6 mi (10 km) northeast of Brandenberg, at mile 73.7 (118.6 km).			11-12-75	f89.6
Tongue River 455844106031901	Yellowstone River	Lat 45°58'44", long 106°03'19", in SW¼SW¼ SE¼ sec.30, T.3 N., R.46 E., Custer County, at Moon Creek Road bridge, 11.4 mi (18.3 km) northeast of Brandenberg, at mile 64.5 (103.8 km).			11-12-75	f65.5
					11-25-75	f66.9
Foster Creek 06307890	Tongue River	Lat 46°01'53", long 105°57'07", in NE¼SE¼ NW¼ sec.12, T.3 N., R.46 E., Custer County, 0.6 mi (1.0 km) upstream from mouth, 18.5 mi (29.8 km) northwest of Volborg at site of water-quality station.	116	1975	10- 8-75	0
					10-23-75	0
					1-21-76	1.04
					2-24-76	.37
					3-16-76	.13
					5-19-76	.89
					6-15-76	4.38
Tongue River 460243105555901	Yellowstone River	Lat 46°02'43", long 105°55'59", in NE¼SE¼ NW¼ sec.6, T.3 N., R.47 E., Custer County, 2 mi (3 km) downstream from Foster Creek, 18.6 mi (29.9 km) northwest of Volborg, at mile 53.2 (85.6 km).			11-12-75	f64.2
Tongue River 460802105483301	Yellowstone River	Lat 46°08'02", long 105°48'33", in SW¼SE¼ NW¼ sec.6, T.4 N., R.48 E., Custer County, 1 mi (2 km) downstream from Ash Creek, 15.6 mi (25.1 km) northwest of Volborg, at mile 36.3 (58.4 km).			11-12-75	f115
					11-25-75	f72.7

See footnotes at end of table, p. 743

Discharge measurements made at miscellaneous sites during water year 1976

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements Date	Measurements Discharge (cfs)
		Yellowstone River basin--continued				
Pumpkin Creek 06308080	Tongue River	Lat 45°32'20", long 105°49'03", in NE¼SE¼ SE¼ sec.29, T.3 S., R.48 E., Powder River County, at culverts on State Highway 212, 5.9 mi (9.5 km) upstream from Winter Gulch, 9.1 mi (14.6 km) north of Sonnette at site of water-quality station.	70.7		10-16-75	0
					11-13-75	0
					8-12-76	0
					9-14-76	0
Pumpkin Creek 06308160	Tongue River	Lat 45°42'40", long 105°43'50", in NW¼ sec.31, T.1 S., R.49 E., Powder River County, at bridge on county road, 0.9 mi (1.4 km) northeast of Loesch, 9 mi (15 km) upstream from Little Pumpkin Creek at site of water-quality station.	102		10-16-75	0
					11-19-75	0
					12-10-75	.30
					1-14-76	.13
					2-12-76	.42
					5-11-76	.31
					7-13-76	d.02
					8-12-76	0
					9-14-76	0
Little Pumpkin Creek 06308170	Pumpkin Creek	Lat 45°46'50", long 105°43'40", in N½ sec.6, T.1 S., R.49 E., Powder River County, on county bridge, 0.9 mi (1.4 km) upstream from mouth, 5.0 mi (8.0 km) southwest of Volborg at site of water-quality station.	101		10-16-75	0
					11-13-75	0
					2-12-76	.42
					3-11-76	.40
					8-12-76	0
					9-14-76	0
Pumpkin Creek 06308190	Tongue River	Lat 45°51'50", long 105°40'10", in W½ sec.5, T.1 N., R.49 E., Custer County, at bridge on U.S. Highway 212, 1.5 mi (2.4 km) upstream from Basin Creek, 1.6 mi (2.6 km) northeast of Volborg at site of water-quality station.	386		10-15-75	0
					11-19-75	0
					2-24-76	1.69
					3-10-76	4.60
					4-15-76	2.04
					5-11-76	3.0
					7-14-76	0
					8-12-76	0
					9-14-76	0
Tongue River 461531105455301	Yellowstone River	Lat 46°15'31", long 105°45'53", in SE¼NW¼ SE¼ sec.19, T.6 N., R.48 E., Custer County, at Woodard Ranch, 0.7 mi (1.1 km) downstream from Pumpkin Creek, 1.1 mi (1.8 km) downstream from Tongue-Yellowstone diversion dam, 12 mi (19 km) south of Miles City, at mile 21.4 (34.4 km).			11-12-75	51.7
					11-25-75	f95.6
					11-26-75	f89.7
Mizpah Creek 06326050	Powder River	Lat 45°32'30", long 105°31'40", in SW¼ sec.26, T.3 S., R.50 E., Powder River County, at bridge on U.S. Highway 212 at Olive, about 1.0 mi (1.6 km) downstream from YT Creek at site of water-quality station.	129		11-19-75	.1
					12-11-75	.22
					2-12-76	.37
					5-11-76	.19
					7-13-76	0
					8-12-76	0
					9-14-76	0
Mizpah Creek 06326200	Powder River	Lat 45°56'00", long 105°23'40", in SW¼ sec.9, T.2 N., R.51 E., Custer County, on bridge on county road, about 2.0 mi (3.2 km) downstream from Spring Creek, 15.1 mi (24.3 km) northeast of Volborg at site of water-quality station.	510		10-15-75	0
					11-13-75	.09
					12- 9-75	.09
					1-13-76	.14
					2-11-76	4.2
					3- 9-76	1.4
					5-10-76	8.87
					6- 8-76	.45
					7-13-76	2.25
					8-11-76	.08
					9-14-76	0
Yellowstone River 06326530	Missouri River	Lat 46°48'17", long 105°17'36", in SE¼SW¼ sec.10, T.12 N., R.51 E., Prairie County, at bridge on county road, 1.2 mi (1.9 km) northeast of Terry, 11.8 mi (19.0 km) downstream from Powder River at site of water-quality station.		1974-75	10-23-75	10,800
					6-17-76	42,100
					7-22-76	20,500
					8-19-76	9,590
					9-23-76	9,150
		Kootenai River basin				
Murray Creek 485708115083001	Lake Koocanusa	Lat 48°57'08", long 115°08'30", in NE¼SE¼ SW¼ sec.20, T.37 N., R.27 W., Lincoln County, at Lake Koocanusa flow line, about 1.0 mi (1.6 km) west of intersection of Carpenter and Sophie Lake roads, 3.6 mi (5.8 km) northwest of Rexford.		1967-69 1972-75	10-16-75	12.6
					12- 2-75	12.4
					12-16-75	12.1
					1-20-76	12.2
					2-20-76	11.8
					3-16-76	11.7
					4-14-76	11.0
					5-18-76	11.3
					6-15-76	12.5
					7-15-76	14.0
					9-28-76	13.7

See footnotes at end of table, p. 743

Discharge measurements made at miscellaneous sites during water year 1976

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements Date	Measurements Discharge (cfs)
		Kootenai River basin--Continued				
Stanley Creek 12303430	Lake Creek	Lat 48°17'18", long 115°51'53", in SE¼NW¼ SE¼ sec.7, T.29 N., R.33 W., Lincoln County, at bridge 0.7 mi (1.1 km) upstream from mouth, 12.1 mi (19.5 km) south of Troy at site of water-quality station.	12.8		5-13-76	148
					5-26-76	171
					7-14-76	147
					8-17-76	95.7
					9-21-76	66.2
Lake Creek 12303490	Kootenai River	Lat 48°22'54", long 115°51'31", on N½ section line between sections 7 and 8, T.30 N., R.33W., Lincoln County, at bridge on Chase Cutoff road, 0.1 mi (0.2 km) downstream from Iron Creek, 5.7 mi (9.2 km) southeast of Troy at site of water-quality station.			5-12-76	1,880
					5-26-76	1,380
					7-14-76	560
					8-18-76	255
					9-21-76	179
		Pend Oreille River basin				
Warm Springs Creek 461051112470301	Silver Bow Creek	Lat 46°10'51", long 112°47'03", in NW¼SE¼ sec.18, T.5 N., R.9 W., Deer Lodge County, 1 mi (2 km) northeast of Warm Springs.		1971-75	10-15-75	50.0
					12- 3-75	64.2
					5-20-76	267
McDonald Creek 12358000	Middle Fork Flathead River	Lat 48°31'34", long 113°59'45", in NE¼SW¼ NW¼ sec.23, T.32 N., R.19 W., Flathead County, Glacier National Park, at bridge on Glacier Route 7, at Apgar at about site of former gaging station.	175	1912-14‡ 1947 1970-75	5-17-76	2,330
Mooring Spring 481728114081101	Lake Blaine	Lat 48°17'28", long 114°08'11", in NW¼NE¼ SE¼ sec.10, T.29 N., R.20 W., Flathead County, at culvert 1.6 mi (2.6 km) downstream from Mooring Slough, 3.1 mi (5.0 km) upstream from Lake Blaine, 6.0 mi (9.7 km) southeast of Columbia Falls.			5-24-76	23.1
Spring Creek 473239114051801	Crow Creek	Lat 47°32'39", long 114°05'18", in NW¼NW¼ NW¼ sec.31, T.21 N., R.19 W., Lake County, at culvert on county road, 0.5 mi (0.8 km) downstream from spring, 1.2 mi (1.9 km) northeast of Ronan.		1975	10- 1-75	32.3
					10-28-75	31.3
					12- 3-75	29.6
					1- 2-76	26.7
					2- 2-76	25.1
					3- 3-76	22.6
					4- 1-76	21.9
					5- 3-76	20.8
					6- 1-76	22.2
Mission Creek 472211114145801	Flathead River	Lat 47°22'11", long 114°14'58", in NW¼NE¼ NE¼ sec.34, T.19 N., R.21 W., Lake County, at bridge at Moiese National Bison Range headquarters, 0.7 mi (1.1 km) east of Moiese, 4.5 mi (7.2 km) upstream from mouth.		1975	10-16-75	166
					12- 3-75	289
					1-15-76	125
					4- 1-76	115
					5- 3-76	106
					7-13-76	483
					9- 7-76	211
Thompson River 12389300	Clark Fork	Lat 47°56'27", long 114°58'27", in NE¼SW¼ NE¼ sec.8, T.25 N., R.26 W., Flathead County, at county bridge, 200 ft (61 m) upstream from Murr Creek, 17.1 mi (27.5 km) southwest of Marion at site of water-quality station.	104	1975	11-10-75	22.2
					4-14-76	182
					6- 9-76	62.6
Thompson River 12389300	Clark Fork	Lat 47°44'05", long 115°01'42", in SE¼SW¼ SW¼ sec.23, T.23 N., R.27 W., Sanders County, at bridge on county road, 1,100 ft (335 m) upstream from Little Thompson River, 17.7 mi (28.5 km) northeast of Thompson Falls at site of water-quality station.	321	1975	11-12-75	69.9
					4-15-76	478
					6-10-76	307
Little Thompson River 12389400	Thompson River	Lat 47°43'46", long 115°01'39", in SE¼NW¼ NW¼ sec.26, T.23 N., R.27 W., Sanders County, at private road bridge, 100 ft (30 m) upstream from mouth, 0.6 mi (1.0 km) downstream from Marten Creek, 17.7 mi (28.5 km) northeast of Thompson Falls at site of water-quality station.	129	1975	11-12-75	18.0
					4-15-76	335
					6-10-76	92.0
West Fork Thompson River 12389450	Thompson River	Lat 47°39'00", long 115°10'22", in W½ sec.23, T.22 N., R.28 W., Sanders County, at bridge on county road, 50 ft (15 m) upstream from mouth, 1.1 mi (1.8 km) downstream from Honeymoon Creek, 8.9 mi (14.3 km) northeast of Thompson Falls at site of water-quality station.	35.7	1975	11-11-75	37.6
					4-16-76	102
					6-11-76	269

See footnotes at end of table, p. 743

† Peak flow.
‡ Operated as a continuous-record gaging station.
a Slope-area measurement.
b Contracted opening measurement.
c Culvert determination.
d Estimate.
e Parshall flume measurement.
f Discharge affected by ice.

Tongue River low-flow investigations--Tongue River Dam to Miles City, Mt

Two series of discharge measurements were made during the 1976 water year, on Nov. 11-12 and 25-26, on the Tongue River and tributaries and diversions in Montana, to study channel gains and losses. The reach is 198.0 mi (318.6 km) in length and extends from near the gaging station Tongue River at Tongue River Dam, near Decker (06307500) to the gaging station Tongue River at Miles City (06308500). The measurements were made during periods of constant base flow of the streams; for more than 10 days before the investigations no measurable rain had fallen. Discharge was affected by ice conditions during both series of measurements. River mileage is based on 1975 file data supplied by the Montana Department of Natural Resources and Conservation.

Tongue River mile	Stream	Location [a]	Date	Measured Discharge (ft^3/s)	Water temp. (°C)
198.0	Tongue River	SE¼SE¼NE¼ sec.13, T.8 S., R.40 E., on Tongue River Dam apron, near Decker.	11-10	33.8	
			11-25	16.2	
197.3	Tongue River	SW¼SE¼SE¼ sec.12, T.8 S., R.40 E., at site of present gaging station.	11-10	20.8	
			11-11	24.0	
			11-25	20.8	
195.8	Tongue River	SE¼SE¼SE¼ sec.6, T.8 S., R.41 E., above Anderson Creek, near Decker.	11-11	20.9	2.5
184.5	Tongue River	NE¼SW¼NE¼ sec.22, T.7 S., R.41 E., below Fourmile Creek, near Decker.	11-11	20.1	1.0
176.1	Tongue River	SE¼NE¼SE¼ sec.31, T.6 S., R.42 E., at Prairie Dog Creek, near Birney.	11-11	26.7	1.0
165.5	Tongue River	NW¼SE¼SE¼ sec.13, T.6 S., R.42 E., above Hanging Woman Creek, near Birney.	11-25	b33.3	0
162.7	Tongue River	NW¼NE¼NW¼ sec.7, T.6 S., R.43 E., above Brown Cattle Company ditch crossing, near Birney.	11-11	45.9	.5
151.5	Tongue River	NE¼SW¼SW¼ sec.8, T.5 S., R.43 E., at Birney Day School, near Birney.	11-11	39.2	.5
135.6	Tongue River	NW¼SE¼NW¼ sec.8, T.4 S., R.44 E., above King Creek, near Ashland.	11-12	b18.5	0
118.3	Tongue River	SE¼SE¼SE¼ sec.3, T.3 S., R.44 E., at Ashland.	11-11	58.5	0
			11-25	b44.9	0
103.8	Tongue River	SE¼NW¼SW¼ sec.27, T.1 S., R.44 E., above Lay Creek, near Ashland.	11-12	b18.6	0
94.2	Tongue River	SE¼SE¼NW¼ sec.2, T.1 S., R.44 E., near Ashland at site of former gaging station.	11-12	b56.5	0
81.1	Tongue River	NE¼SW¼NW¼ sec.6, T.1 N., R.45 E., at site of present gaging station.	11-12	b83.0	0
			11-25	b58.0	0
73.7	Tongue River	SE¼NW¼SW¼ sec.16, T.2 N., R.45 E., below S-H dam, near Brandenberg.	11-12	b89.6	0
64.5	Tongue River	SW¼SW¼SE¼ sec.30, T.3 N., R.46 E., at Moon Creek Bridge, near Brandenberg.	11-12	b65.5	.5
			11-25	b66.9	0
53.2	Tongue River	NE¼SE¼NW¼ sec.6, T.3 N., R.47 E., below Foster Creek, near Volborg.	11-12	b64.2	1.0
36.3	Tongue River	SW¼SE¼NW¼ sec.6, T.4 N., R.48 E., below Ash Creek, near Volborg.	11-25	b115	0
21.4	Tongue River	SE¼NW¼SE¼ sec.19, T.6 N., R.48 E., below Pumpkin Creek, near Miles City.	11-12	51.7	0
			11-25	b95.6	0
			11-26	b89.7	.5
10.8	Tongue River	NE¼NE¼SE¼ sec.23, T.7 N., R.47 E., at site of present gaging station.	11-07	137	4.0
			11-12	155	
			11-19	106	0
			11-20	b31.5	0
			11-25	b86.0	0
			11-26	b76.3	0

a) See pages 437-484 in this publication for additional location information regarding these sites.
b Discharge affected by ice.

Samples are collected at sites other than gaging stations and partial-record stations to give better areal coverage in a river basin. Such sites are referred to as miscellaneous sites.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	AIR TEMPERATURE (DEG C)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	FECAL COLIFORM (COL. PER 100 ML)	FECAL STREPTOCOCCI KF AGAR (COL. PER 100 ML)
12389200 - THOMPSON RIVER NEAR MARION, MT. (LAT 47 56 27 LONG 114 58 27)											
NOV , 1975											
10...	1130	22	241	7.8	-3.0	2.0	1	10.8	89	53	6
APR , 1976											
14...	1100	182	140	7.7	15.0	5.5	6	9.4	84	6	17
JUN											
09...	1030	63	184	8.0	23.0	15.0	1	8.0	89	110	26
12389300 - THOMPSON R AB L THOMPSON R NR THOMPSON FALLS, MT (LAT 47 44 05 LONG 115 01 42)											
NOV , 1975											
12...	1030	70	197	8.4	.0	1.5	1	13.2	105	5	7
APR , 1976											
15...	1030	478	115	8.4	8.0	5.0	7	11.0	96	2	12
JUN											
10...	1030	307	98	8.2	17.0	11.0	2	9.8	99	22	8
12389400 - LITTLE THOMPSON RIVER NEAR THOMPSON FALLS, MT. (LAT 47 43 46 LONG 115 01 39)											
NOV , 1975											
12...	1300	18	110	8.9	4.0	.5	1	13.0	101	3	11
APR , 1976											
15...	1330	335	58	7.8	8.0	5.0	9	11.2	97	1	6
JUN											
10...	1330	92	52	8.3	17.0	12.5	3	9.6	99	99	10
12389450 - WEST FORK THOMPSON RIVER NR THOMPSON FALLS, MT. (LAT 47 39 00 LONG 115 10 22)											
NOV , 1975											
11...	1100	38	76	7.6	2.0	4.0	0	12.6	105	<1	<1
APR , 1976											
16...	1030	102	65	8.5	7.0	4.0	1	12.0	102	<1	<1
JUN											
11...	1100	269	40	8.2	15.0	6.5	1	11.4	103	<1	<1
12389500 - THOMPSON RIVER NEAR THOMPSON FALLS, MT. (LAT 47 35 31 LONG 115 13 43)											
NOV , 1975											
11...	1330	224	165	7.9	2.0	4.0	0	12.6	105	<1	<1
APR , 1976											
16...	1315	1320	100	8.3	7.0	5.0	6	11.6	98	<1	1
JUN											
11...	1400	1100	85	8.2	22.0	10.0	1	10.6	103	<1	20

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	SODIUM AD-SORP-TION RATIO	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)
12389200 - THOMPSON RIVER NEAR MARION, MT. (LAT 47 56 27 LONG 114 58 27)											
NOV , 1975											
10...	120	0	30	12	5.5	.2	1.6	160	0	2.6	1.0
APR , 1976											
14...	73	0	18	6.7	3.6	.2	1.4	94	0	3.8	1.4
JUN											
09...	98	0	23	9.9	3.7	.2	1.3	123	0	4.2	1.3
12389300 - THOMPSON R AB L THOMPSON R NR THOMPSON FALLS, MT (LAT 47 44 05 LONG 115 01 42)											
NOV , 1975											
12...	100	0	26	9.1	4.3	.2	1.0	129	1	4.3	1.0
APR , 1976											
15...	59	1	14	5.8	2.5	.1	1.0	71	0	2.6	.5
JUN											
10...	51	0	13	4.6	2.5	.2	.8	68	0	2.6	1.9
12389400 - LITTLE THOMPSON RIVER NEAR THOMPSON FALLS, MT. (LAT 47 43 46 LONG 115 01 39)											
NOV , 1975											
12...	49	0	13	4.1	3.8	.2	.8	70	0	5.5	1.0
APR , 1976											
15...	23	0	6.0	2.0	2.4	.2	.8	32	0	3.3	.6
JUN											
10...	27	0	7.0	2.2	2.4	.2	.8	42	0	2.0	.3
12389450 - WEST FORK THOMPSON RIVER NR THOMPSON FALLS, MT. (LAT 47 39 00 LONG 115 10 22)											
NOV , 1975											
11...	43	2	13	2.5	1.4	.1	.3	50	0	2.3	.9
APR , 1976											
16...	30	0	8.6	2.1	1.1	.1	.4	41	0	2.1	.1
JUN											
11...	24	0	7.0	1.6	.4	.0	.3	36	0	.4	.4
12389500 - THOMPSON RIVER NEAR THOMPSON FALLS, MT. (LAT 47 35 31 LONG 115 13 43)											
NOV , 1975											
11...	89	3	24	7.1	2.5	.1	.7	105	0	3.5	.7
APR , 1976											
16...	56	0	13	5.6	2.5	.1	.8	72	0	3.3	1.0
JUN											
11...	48	0	12	4.3	1.4	.1	.6	59	0	3.2	1.0

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)
12389200 - THOMPSON RIVER NEAR MARION, MT. (LAT 47 56 27 LONG 114 58 27)											
NOV , 1975											
10...	.1	12	142	.19	8.43	.01	.46	.47	2.1	0	0
APR , 1976											
14...	.1	14	101	.14	49.6	.00	.71	.71	.18	0	1
JUN											
09...	.1	9.7	129	.18	21.9	.02	.23	.25	.02	0	0
12389300 - THOMPSON R AB L THOMPSON R NR THOMPSON FALLS, MT (LAT 47 44 05 LONG 115 01 42)											
NOV , 1975											
12...	.1	13	114	.16	21.5	.02	.05	.07	.01	1	0
APR , 1976											
15...	.1	15	79	.11	102	.01	.15	.16	.08	0	0
JUN											
10...	.1	13	71	.10	58.9	.06	.10	.16	.04	0	0
12389400 - LITTLE THOMPSON RIVER NEAR THOMPSON FALLS, MT. (LAT 47 43 46 LONG 115 01 39)											
NOV , 1975											
12...	.1	15	75	.10	3.65	.05	.20	.25	.02	1	0
APR , 1976											
15...	.0	18	55	.07	49.7	.01	.23	.24	.04	0	1
JUN											
10...	.1	15	24	.03	5.96	.00	.18	.18	.03	0	0
12389450 - WEST FORK THOMPSON RIVER NR THOMPSON FALLS, MT. (LAT 47 39 00 LONG 115 10 22)											
NOV , 1975											
11...	.0	6.9	49	.07	5.03	.02	.00	.02	.01	1	0
APR , 1976											
16...	.1	7.7	45	.06	12.4	.03	.00	.03	.01	1	0
JUN											
11...	.0	13	34	.05	24.7	.01	.01	.02	.03	0	0
12389500 - THOMPSON RIVER NEAR THOMPSON FALLS, MT. (LAT 47 35 31 LONG 115 13 43)											
NOV , 1975											
11...	.0	10	102	.14	61.7	.02	.05	.07	.00	1	0
APR , 1976											
16...	.1	12	79	.11	282	.01	.11	.12	.02	1	0
JUN											
11...	.1	.1	60	.08	178	.02	.01	.03	.03	0	0

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
12389200 - THOMPSON RIVER NEAR MARION, MT. (LAT 47 56 27 LONG 114 58 27)											
NOV , 1975											
10...	2	0	0	140	2	20	--	.0	0	20	3.5
APR , 1976											
14...	0	2	2	120	0	10	--	.0	0	20	11
JUN											
09...	<10	0	0	80	2	10	<.5	<.5	0	0	5.1
12389300 - THOMPSON R AB L THOMPSON R NR THOMPSON FALLS, MT (LAT 47 44 05 LONG 115 01 42)											
NOV , 1975											
12...	0	0	2	80	1	4	--	.0	0	2	1.4
APR , 1976											
15...	0	0	1	60	2	10	--	.0	0	10	7.1
JUN											
10...	<10	0	0	10	1	0	<.5	<.5	0	0	2.4
12389400 - LITTLE THOMPSON RIVER NEAR THOMPSON FALLS, MT. (LAT 47 43 46 LONG 115 01 39)											
NOV , 1975											
12...	4	0	2	20	0	0	--	.0	0	6	1.9
APR , 1976											
15...	0	2	1	100	1	0	--	.1	0	10	7.1
JUN											
10...	<10	0	0	60	2	0	<.5	<.5	0	0	3.4
12389450 - WEST FORK THOMPSON RIVER NR THOMPSON FALLS, MT. (LAT 47 39 00 LONG 115 10 22)											
NOV , 1975											
11...	2	1	2	10	1	2	--	.0	0	0	1.8
APR , 1976											
16...	0	2	2	10	1	0	--	.0	0	10	.8
JUN											
11...	<10	0	0	0	2	0	<.5	<.5	0	10	7.4
12389500 - THOMPSON RIVER NEAR THOMPSON FALLS, MT. (LAT 47 35 31 LONG 115 13 43)											
NOV , 1975											
11...	4	1	1	10	2	2	--	.0	0	2	7.7
APR , 1976											
16...	10	2	0	10	1	0	--	.0	0	10	4.2
JUN											
11...	<10	0	0	20	1	0	<.5	<.5	0	0	1.8

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	DIS-SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS-PENDED GROSS ALPHA AS U-NAT. (UG/L)	DIS-SOLVED GROSS BETA AS CS-137 (PC/L)	SUS-PENDED GROSS BETA AS CS-137 (PC/L)	DIS-SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS-PENDED GROSS BETA AS SR90 /Y90 (PC/L)	DIS-SOLVED URANIUM (U) (UG/L)	DIS-SOLVED RA-226 (RADON METHOD) (PC/L)	TOTAL FILT-RABLE RESIDUE (MG/L)	TOTAL NON-FILT-RABLE RESIDUE (MG/L)
12389450 - WEST FORK THOMPSON RIVER NR THOMPSON FALLS, MT. (LAT 47 39 00 LONG 115 10 22)											
APR , 1976											
16...	1030	<.4	<.4	.5	<.4	<.4	<.4	.50	.06	32	3
12389500 - THOMPSON RIVER NEAR THOMPSON FALLS, MT. (LAT 47 35 31 LONG 115 13 43)											
APR , 1976											
16...	1315	1.5	.6	1.4	<.4	1.1	<.4	.40	.03	72	8

DATE	TIME	TEMPER-ATURE (DEG C)	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
12389200 - THOMPSON RIVER NEAR MARION, MT. (LAT 47 56 27 LONG 114 58 27)					
NOV , 1975					
10...	1130	2.0	22	2	.12
APR , 1976					
14...	1100	5.5	182	23	11
JUN					
09...	1030	15.0	63	1	.17
12389300 - THOMPSON R AB L THOMPSON R NR THOMPSON FALLS, MT (LAT 47 44 05 LONG 115 01 42)					
NOV , 1975					
12...	1030	1.5	70	2	.38
APR , 1976					
15...	1030	5.0	478	25	32
JUN					
10...	1030	11.0	307	3	2.5
12389400 - LITTLE THOMPSON RIVER NEAR THOMPSON FALLS, MT. (LAT 47 43 46 LONG 115 01 39)					
NOV , 1975					
12...	1300	.5	18	2	.10
APR , 1976					
15...	1330	5.0	335	21	19
JUN					
10...	1330	12.5	92	4	.99
12389450 - WEST FORK THOMPSON RIVER NR THOMPSON FALLS, MT. (LAT 47 39 00 LONG 115 10 22)					
NOV , 1975					
11...	1100	4.0	38	1	.10
APR , 1976					
16...	1030	4.0	102	4	1.1
JUN					
11...	1100	6.5	269	3	2.2
12389500 - THOMPSON RIVER NEAR THOMPSON FALLS, MT. (LAT 47 35 31 LONG 115 13 43)					
NOV , 1975					
11...	1330	4.0	224	1	.60
APR , 1976					
16...	1315	5.0	1320	20	71
JUN					
11...	1400	10.0	1100	4	12

CASCADE COUNTY

472651111221101. Local number, 20N03E32AADD.
LOCATION.--Lat 47°26'51", long 111°22'11", Hydrologic Unit 10030102, at Sun River Bench, Great Falls. Owner: D. Van Hining.
AQUIFER.--Flood Member of Blackleaf Formation.
WELL CHARACTERISTICS.--Drilled domestic artesian well, diameter 6 in (0.15 m), depth 88 ft (27 m), cased with plastic pipe, open end.
DATUM.--Land-surface datum is 3,722 ft (1,134 m) above mean sea level, from topographic map. Measuring point: Top of casing, 1.0 ft (0.3 m) above land-surface datum.
PERIOD OF RECORD.--May 1973 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water-level measured, 31.10 ft (9.48 m) below land-surface datum, Dec. 23, 1965; lowest 43.10 ft (13.14 m) below land-surface datum, June 6, 1947.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 1	34.75	June 3	37.05
Feb. 26	37.04	July 14	36.29
Mar. 31	37.77	Sept.10	35.15
May 4	37.51		

CHOTEAU COUNTY

481542110023501. Local number 29N13E21AA2.
LOCATION.--Lat 48°15'42", long 110°02'35", Hydrologic Unit 10050005. Owner: U.S. Geological Survey.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 2 in (0.06 m), depth 210 ft (64 m), case to 167 ft (51 m), open end.
DATUM.--Land-surface datum is 2,680 ft (817 m) above mean sea level. Measuring point: Top of casing, 0.40 (0.12 m) above land-surface datum.
REMARKS.--Water-level affected by nearby irrigation well pumpage.
PERIOD OF RECORD.--1947-76.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 15.28 ft (4.66 m) below land-surface datum, Aug. 2, 1 lowest, 27.03 ft (8.24 m) below land-surface datum, July 28, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 30	21.32	Mar. 23	20.30
Dec. 3	20.37	May 4	25.20
Jan. 6	21.00	June 2	22.40
Feb. 4	20.58	June 30	22.20
Feb. 24	20.48	July 28	27.03
		Sept. 1	25.54

DEER LODGE COUNTY

460632112493501. Local number, 04N10W10DC2.
LOCATION.--Lat 46°06'32", long 112°49'35", Hydrologic Unit 17010201. Owner: Village of Opportunity.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Driven fire protection water-table well, diameter 4 in (0.1 m), depth 20.0 ft (6.1 m), steel casing.
DATUM.--Land-surface datum is 4,979 ft (1,518 m) above mean sea level. Measuring point: Bottom of 6 in (0.15 m) outlet pipe, 1.3 ft (0.4 m) above land-surface datum.
PERIOD OF RECORD.--July 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level 3.50 ft (1.07 m) below land-surface datum, June 7, 1967; lowest 5.22 ft (1.59 m) below land-surface datum, Mar. 13, 1972.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL
Nov. 24	4.34	May 26	3.82
Feb. 10	4.60	Aug.29	4.08

DEER LODGE COUNTY

461420112504501. Local number, 06N10W27CC.
LOCATION.--Lat 46°14'20", long 112°50'45", Hydrologic Unit 17010201. Owner: Mount Haggin Land and Livestock Company.
AQUIFER.--Deposits of Tertiary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diamter 6 in (0.15 m), depth 88.8 ft (27.1 m), steel casing.
DATUM.--Land-surface datum is 5,006 ft (1,526 m) above mean sea level. Measuring point: Top of casing, 0.50 ft (0.15 m) above land-surface datum.
PERIOD OF RECORD.--June 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level 31.08 ft (9.47 m) below land-surface datum, Aug. 29, 1976; lowest 66.17 ft (20.17 m) below land-surface datum, June 9, 1969.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL
Nov. 24	36.44	May 26	58.51
Feb. 10	47.30	Aug.29	31.08

DEER LODGE COUNTY

461515112441201. Local number, 06N09W21CD1.
LOCATION.--Lat 46°15'15", long 112°44'12", Hydrologic Unit 17010201. Owner: W. Beck.
Deposits of Tertiary Age.
WELL CHARACTERISTICS.--Drilled domestic and stock artesian well, diameter 6 in (0.15 m), depth 150 ft (46 m), steel casing.
DATUM.--Land-surface datum is 4,786 ft (1,459 m) above mean sea level. Measuring point: Top of well cap, 0.50 ft (0.15 m) above land-surface datum.
PERIOD OF RECORD.--September 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level 88.97 ft (27.12 m) below land-surface datum, Aug. 20, 1968; lowest 93.24 ft (28.42 m) below land-surface datum, Mar. 29, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL
Nov. 24	91.95	May 26	91.83
Feb. 10	92.11		

FLATHEAD COUNTY

480544114104501. Local number, 27N20W17CC.
LOCATION.--Lat 48°05'44", long 114°10'45", Hydrologic Unit 17010208. Owner: U.S. Geological Survey.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Bored observation water-table well, diameter 1½ in (3.8 cm), depth 9.6 ft (2.9 m), cased with steel pipe.
DATUM.--Land-surface datum is 2,896 ft (883 m) above mean sea level. Measuring point: Top of pipe, 1.5 ft (0.5 m) above land-surface datum.
PERIOD OF RECORD.--October 1963 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1.82 ft (0.55 m) below land-surface datum, Mar. 1, 1965; lowest 5.22 ft (1.59 m) below land-surface datum, Sept. 19, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL
Dec. 9	4.42	June 30	4.77
Mar. 11	4.68	Sept. 22	4.70

FLATHEAD COUNTY

481458114111701. Local number, 29N20W29BD.
LOCATION.--Lat 48°14'58", long 114°11'17", Hydrologic Unit 17010208. Owner: John Byrne.
AQUIFER.--Glacial deposits of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 5 in (0.13 m), depth 151 ft (46 m), steel casing.
DATUM.--Land-surface datum is 2,983 ft (909 m) above mean sea level. Measuring point: Top of casing, 2.5 ft (0.8 m) above land-surface datum.
PERIOD OF RECORD.--September 1963 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 19.88 ft (6.06 m) below land-surface datum, Aug. 18, 1969; lowest 39.24 ft (11.96 m) below land-surface datum, June 11, 1975.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL
Dec. 9	22.91	June 30	36.34
Mar. 11	24.18	Sept. 22	22.10

FLATHEAD COUNTY

481519114182501. Local number, 29N21W20CCC.
LOCATION.--Lat 48°15'19", long 114°18'25", Hydrologic Unit 17010210. Owner: Lutheran Cemetary Association.
AQUIFER.--Glacial deposits of Quaternary Age.
WELL CHARACTERISTICS.--Drilled irrigation artesian well, diameter 6 in (0.15 m), depth 278 ft (85 m), steel casing.
DATUM.--Land-surface datum is 3,027 ft (923 m) above mean sea level. Measuring point: Top of casing, 5.0 ft (1.5 m) below land surface datum.
REMARKS.--Used in irrigation season only.
PERIOD OF RECORD.--October 1963 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 100.00 ft (30.48 m) below land-surface datum, July 1, 1964; lowest 106.16 ft (32.36 m) below land-surface datum, Sept. 22, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL
Dec. 9	104.46	June 30	104.11
Mar. 11	104.28	Sept. 22	106.16

FLATHEAD COUNTY

481653114114901. Local number, 29N20W18AA1.
LOCATION.--Lat 48°16'53", long 114°11'49", Hydrologic Unit 17010208. Owner: William Anderson.
AQUIFER.--Eolian deposits of Quaternary Age.
WELL CHARACTERISTICS.--Dug unused water-table well, diameter 56 in (1.4 m), depth 20.0 ft (6.1 m), concrete casing.
DATUM.--Land-surface datum is 3,050 ft (930 m) above mean sea level. Measuring point: Top of 3/4 in (1.9 cm) pipe, 0.7 ft (0.2 m) below land-surface datum.
PERIOD OF RECORD.--October 1963 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level 14.73 ft (4.49 m) below land-surface datum, June 11, 1970; lowest 17.79 ft (5.42 m) below land-surface datum, Sept. 22, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1955 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL
Dec. 9	17.52	June 30	17.54
Mar. 11	17.09	Sept. 22	17.79

GALLATIN COUNTY

453937111110301. Local number 02S04E13CC.
LOCATION.--Lat 45°39'37", long 111°11'03", Hydrologic Unit 10020008. Owner: Unknown.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Dug observation water-table well, diameter 12 in (0.30 m), depth 11 ft (3.35 m), cased with tile.
DATUM.--Land-surface datum is 4,738 ft (1,444 m) above mean sea level. Measuring point: Top of casing, 0.5 ft (0.15 m) above land-surface datum.
PERIOD OF RECORD.--June 1947 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level 2.54 ft (0.77 m) below land-surface datum, June 27, 1952; lowest 10.40 ft (3.17 m) below land-surface datum, Feb. 20, 1971.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 1	6.42	Mar. 31	8.35
Nov. 6	6.23	Apr. 30	6.73
Dec. 4	6.92	May 24	6.92
Dec. 30	7.15	July 2	3.92
Jan. 30	7.64	Aug. 2	3.93
Mar. 1	8.67	Sept. 3	5.25

GLACIER COUNTY

483345113004501. Local number, 32N11W03AD.
LOCATION.--Lat 48°33'45", long 113°00'45", Hydrologic Unit 10030202. Owner: U.S. Geological Survey.
AQUIFER.--Glacial drift of Pleistocene Age.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 1¼ in (3 cm), depth 12 ft (3.66 m), cased with pipe.
DATUM.--Land-surface datum is 4,416 ft (1,346 m) above mean sea level. Measuring point: Top of pipe, 3.30 ft (1.01 m) above land-surface datum.
PERIOD OF RECORD.--January 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level 4.81 ft (1.47 m) below land-surface datum, Mar 3, 1972: lowest 7.82 ft (2.38 m) below land-surface datum, Aug. 2, and Aug. 28, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 14	7.06	Mar. 31	6.71
Oct. 29	7.08	Apr. 28	6.22
Dec. 3	6.97	June 8	7.02
Dec. 30	6.72	July 8	7.20
Jan. 28	6.32	Aug. 3	7.28
Feb. 26	7.05	Sept. 2	7.48

HILL COUNTY

483138109481001. Local number, 32N15E17DDD.
LOCATION.--Lat 48°31'38", long 109°48'10", Hydrologic Unit 10050006. Owner: U.S. Geological Survey.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 2 in (0.8 cm), depth 180 ft (55 m), cased with pipe to 152 ft (46 m).
DATUM.--Land-surface datum is 2,580 ft (786 m) above mean sea level. Measuring point: Top of coupling, 0.2 ft (0.08 m) above land-surface datum.
PERIOD OF RECORD.--May 1947 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level 39.08 ft (11.91 m) below land-surface datum, April 23, 1976; lowest 52.56 ft (16.02 m) below land-surface datum, June 18, 1947.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 1	39.37	Apr. 23	39.08
Oct. 29	39.31	May 4	39.12
Nov. 26	39.33	June 2	39.20
Jan. 6	39.24	June 30	39.24
Feb. 4	39.12	July 28	39.40
Feb. 24	39.09	Sept. 1	39.65

PHILLIPS COUNTY

482732107201201. Local number, 31N34E08CA.
LOCATION.--Lat 48°27'32", long 107°20'12", Hydrologic Unit 10050014. Owner: W.D. Miller.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 5 in (13 cm), depth 15 ft (5 m), cased with pipe.
DATUM.--Land-surface datum is 2,175 ft (663 m) above mean sea level. Measuring point: Top of casing, 1.70 ft (0.52 m) above land-surface datum.
REMARKS.--Originally drilled to a depth of 50 ft (15 m) with gravel from 45 to 50 ft (14 to 15 m)
PERIOD OF RECORD.--June 1947 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level 0.40 ft (0.12 m) below land-surface datum, July 18, 1963; lowest 6.90 ft (2.10 m) below land-surface datum, Mar. 11, 1953.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 10	4.46	June 9	4.77
Nov. 14	4.60	July 17	4.57
Jan. 15	4.70	Sept. 9	4.50
Feb. 2	4.72		
Apr. 13	4.95		
May 11	4.82		

POWELL COUNTY

461847112464001. Local number, 07N09W31CD.
LOCATION.--Lat 46°18'47", long 112°46'40", Hydrologic Unit 17010201. Owner: L. Johnson.
AQUIFER.--Deposits of Tertiary Age.
WELL CHARACTERISTICS.--Dug unused water-table well, diameter 36 in (0.91 m), depth 50 ft (15 m), cribbed with rock.
DATUM.--Land-surface datum is 4,729 ft (1,441 m) above mean sea level. Measuring point: Top of wood cover, at land-surface datum.
PERIOD OF RECORD.--September 1957 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level 32.25 ft (9.83 m) below land-surface datum, Aug. 26, 1975; lowest 52.12 ft (15.89 m) below land-surface datum, May 26, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL
Nov. 24	34.59	May 26	52.12
Feb. 10	43.92	Aug. 29	38.40

POWELL COUNTY

463540112320301. Local number, 10N07W30BB.
LOCATION.--Lat 46°35'40", long 112°32'03", Hydrologic Unit 17010201. Owner: Powell County School District.
AQUIFER.--Sands and gravels of Tertiary Age.
WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 6 in (0.15 m), depth 69.6 ft (21.2 m), steel casing.
DATUM.--Land-surface datum is 4,825 ft (1,471 m) above mean sea level. Measuring point: Top of casing, 0.5 ft (0.15 m) above land-surface datum.
PERIOD OF RECORD.--June 1961 to March 1963, September 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level 28.90 ft (8.81 m) below land-surface datum, June 30, 1975; lowest 34.37 ft (10.48 m) below land-surface datum, Aug. 20, 1968.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL
Nov. 24	31.41	May 26	31.23
Feb. 10	32.08	Aug. 29	31.47

POWELL COUNTY

463500112360003. Local number, 10N08W28AA3.
LOCATION.--Lat 46°35'00", long 112°06'00", Hydrologic Unit 17010201. Owner: H.C. Young.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled domestic water-table well, diameter 6 in (0.15 m), depth 23.4 ft (7.13 m), steel casing.
DATUM.--Land-surface datum is 4,709 ft (1,435 m) above mean sea level. Measuring point: Top of casing, 0.7 ft (0.2 m) above land-surface datum.
PERIOD OF RECORD.--April 1962 to December 1963, March 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level 3.06 ft (0.93 m) below land-surface datum, June 9, 1969; lowest 10.26 ft (3.13 m) below land-surface datum, March 9, 1967.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL
Nov. 24	7.42	May 26	3.80
Feb. 10	7.49	Aug. 29	6.05

PRAIRIE COUNTY

464457104390001. Local number, 12N56E34DA.
LOCATION.--Lat 46°44'57", long 104°39'00", Hydrologic Unit 10100004. Owner: Shell Oil Company.
AQUIFER.--Basal Hell Creek-Fox Hills Sandstone.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 4 in (0.1 m), depth 1,467 ft (447 m), cased with pipe.
DATUM.--Land-surface datum is 2,707 ft (825 m) above mean sea level. Measuring point: Top of casing 3.1 ft (0.9 m) above land-surface datum.
REMARKS.--Water level affected by industrial pumpage.
PERIOD OF RECORD.--December 1962 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level 224.89 ft (68.55 m) below land-surface datum, Dec. 13, 1962; lowest 382.45 ft (116.57 m) below land-surface datum, May 26, 1971.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL
Nov. 4	339.95	June 4	322.29
Dec. 4	336.80	July 14	319.38
Mar. 30	324.70	July 29	318.36
May 3	324.80	Sept.10	316.28

PRAIRIE COUNTY

464624104380601. Local number, 12N56E23DC.
LOCATION.--Lat 46°46'24", long 104°38'06", Hydrologic Unit 10100004. Owner: Shell Oil Company.
AQUIFER.--Basal Hell Creek-Fox Hills Sandstone.
WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 4 in (0.1 m), depth 1,185 ft (361 m), cased with pipe.
DATUM.--Land-surface datum is 2,701 ft (823 m) above mean sea level. Measuring point: Top of casing 1.5 ft (0.5 m) above land-surface datum.
REMARKS.--Water level affected by industrial pumpage.
PERIOD OF RECORD.--October 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level 219.50 ft (66.90 m) below land-surface datum, Oct. 5, 1962; lowest 493.84 ft (150.52 m) below land-surface datum, Mar. 3, 1971.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL
Nov. 4	344.70	June 4	325.06
Dec. 4	329.50	July 14	320.98
Jan. 20	340.50	July 29	319.43
Feb. 17	330.97	Sept.10	317.25
Mar. 30	321.5		

RAVALLI COUNTY

461518114090801. Local number, 06N20W19CC1.
LOCATION.--Lat 46°15'18", long 114°09'08", Hydrologic Unit 17010205. Owner: Bonneville Power Administration.
AQUIFER.--Flood plain Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6 in (0.15 m), depth 40 ft (12 m), cased with pipe.
DATUM.--Land-surface datum is 3,557 ft (1,084 m) above mean sea level. Measuring point: Top of recorder shelf 3.0 ft (0.9 m) above land-surface datum.
REMARKS.--Water-stage recorder installed September 1970.
PERIOD OF RECORD.--September 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level 3.06 ft (0.93 m) below land-surface datum, June 25, 1971; lowest, 17.24 ft (5.31 m) below land-surface datum, May 21, 1975.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 28	10.20	Apr. 20	16.68
Nov. 21	11.82	May 24	14.66
Dec. 22	13.27	June 21	5.19
Jan. 22	14.42	July 22	5.60
Feb. 23	15.54	Aug. 20	6.03
Mar. 24	16.16	Sept. 23	7.42

RAVALLI COUNTY

463750114033001. Local number, 10N20W13BA.
LOCATION.--Lat 46°37'50", long 114°03'30", Hydrologic Unit 17010205. Owner: Bonneville Power Administration.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6 in (0.15 m), depth 50.5 ft (15.4 m), cased with pipe.
DATUM.--Land-surface datum is 3,200 ft (975 m) above mean sea level. Measuring point: Top of casing, 0.5 ft (0.15 m) above land-surface datum.
PERIOD OF RECORD.--May 1959 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water-level 2.48 ft (0.76 m) below land-surface datum, June 15, 1959; lowest, 7.55 ft (2.30 m) below land-surface datum, April 15, 1975.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL
Nov. 24	5.68	May 26	4.13
Feb. 10	6.44	Aug. 29	6.15

RAVALLI COUNTY

463140114064001. Local number 09N20W21AD1.
LOCATION.--Lat 46°31'40", long 114°06'40", Hydrologic Unit 17010205. Owner: D. Shea.
AQUIFER.--Alluvium underlying river terraces.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 4 in (0.1 m), depth 32 ft (10 m), cased with pipe.
DATUM.--Land-surface datum is 3,308 ft (1,008 m) above mean sea level. Measuring point: Top of casing, 0.8 ft (0.24 m) above land-surface datum.
PERIOD OF RECORD.--September 1955 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level 1.72 ft (0.52 m) below land-surface datum, June 22, 1976; lowest, 27.99 ft (8.53 m) below land-surface datum, Apr. 1, 1961.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 28	12.49	Apr. 20	25.47
Nov. 21	14.11	May 25	19.78
Dec. 22	16.69	June 22	1.72
Jan. 22	19.48	July 22	3.96
Feb. 23	22.19	Aug. 20	10.16
Mar. 24	24.22	Temporarily Discontinued	

RICHLAND COUNTY

480713104285001. Local number, 27N56E03CAA.
LOCATION.--Lat 48°07'13", long 104°28'50", Hydrologic Unit 10060005. Owner: U.S. Geological Survey.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 1¼ in (0.03 m), depth 75 ft (23 m), cased with pipe, finished with continuous slot drive point.
DATUM.--Land-surface datum is 1,902.3 ft (579.8 m) above mean sea level. Measuring point: Top of pipe 0.80 ft (0.24 m) above land-surface datum.
PERIOD OF RECORD.--September 1963 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level 6.70 ft (2.04 m) below land-surface datum, Mar. 20, 1972; lowest, 13.93 ft (4.25 m) below land-surface datum, Nov. 18, 1963.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 9	10.39	May 11	9.32
Dec. 12	9.90	July 26	9.37
Feb. 10	8.01	Aug. 18	11.07
Mar. 10	7.92	Sept.16	10.49

SANDERS COUNTY

474251114385201. Local number, 23N24W34ADA.
LOCATION.--Lat 47°42'51", long 114°38'52", Hydrologic Unit 17010212. Owner: U.S. Bureau of Indian Affairs.
AQUIFER.--Glacial lake deposits of Quaternary age.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 18 in (0.46 m), depth 377 ft (115 m), perforated with 480 perforations.
DATUM.--Land-surface datum is 2,878.6 ft (877.4 m) above mean sea level. Measuring point: Top of casing, 1.0 ft (0.3 m) above land-surface datum.
REMARKS.--Water-stage recorder installed January 1971. Submersible pump installed for stock purposes.
PERIOD OF RECORD.--March 1943 to June 1943, October 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 106.82 ft (32.56 m) below land-surface datum, Apr. 14, 1976; lowest, 114.51 ft (34.90 m) below land-surface datum, Aug. 9, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MIDNIGHT VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT
1	109.72	107.94	107.72	107.70	107.37	107.17	107.07	107.09	111.31	111.15	113.57	111.63
5	.26	.77	.80	.54	.38	.27	106.92	.71	.59	110.85	114.10	.41
10	108.77	.68	.70	.51	.34	.09	.98	108.23	.15	111.00	.44	.43
15	.53	.65	.76	.60	.28	.24	.90	.68	.60	.52	113.38	.45
20	.30	.80	.72	.57	.33	.22	.93	110.00	.76	.76	112.94	.30
25	.97	.70	.64	.48	.22	.22	.98	.94	.67	112.15	.57	110.88
30	107.98	.67	.62	.48	--	.09	107.08	111.22	.15	113.12	111.97	.35

TOOLE COUNTY

485311111540901. Local number, 36N02W08CC.
LOCATION.--Lat 48°53'11", long 111°54'09", Hydrologic Unit 10030203. Owner: C. Luckenbill.
AQUIFER.--Gravel of Pleistocene Age.
WELL CHARACTERISTICS.--Driven observation water-table well in backfilled dug well, diameter 1¼ in (0.03 m), depth 15.3 ft (4.7 m), cased with pipe.
DATUM.--Land-surface datum is 3,330 ft (1,015 m) above mean sea level. Measuring point: Top of pipe at land-surface datum.
PERIOD OF RECORD.--July 1947 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level 1.22 ft (0.37 m) below land-surface datum, May 16, 1967; lowest, 10.89 ft (3.32 m) below land-surface datum, Dec. 18, 1961.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 16	5.33	Mar. 24	2.45
Dec. 19	5.02	May 5	2.42
Jan. 25	4.19		

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FACTORS FOR CONVERTING ENGLISH UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the English units published herein to the International System of Units (SI). Subsequent reports will contain both the English and SI unit equivalents in the station manuscript descriptions until such time that all data will be published in SI units.

Multiply English units	By	To obtain SI units
	Length	
inches (in)	2.54×10^{1}	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^{0}	kilometers (km)
	Area	
acres	4.047×10^{3}	square meters (m^2)
	4.047×10^{-1}	*hectares (ha)
	4.047×10^{-1}	square hectometers (hm^2)
	4.047×10^{-3}	square kilometers (km^2)
square miles (mi^2)	2.590×10^{0}	square kilometers (km^2)
	Volume	
gallons (gal)	3.785×10^{0}	**liters (l)
	3.785×10^{0}	cubic decimeters (dm^3)
	3.785×10^{-3}	cubic meters (m^3)
million gallons (10^6 gal)	3.785×10^{3}	cubic meters (m^3)
	3.785×10^{-3}	cubic hectometers (hm^3)
cubic feet (ft^3)	2.832×10^{1}	cubic decimeters (dm^3)
	2.832×10^{-2}	cubic meters (m^3)
cfs-days [(ft^3/s) · d]	2.447×10^{3}	cubic meters (m^3)
	2.447×10^{-3}	cubic hectometers (hm^3)
acre-feet (acre-ft)	1.233×10^{3}	cubic meters (m^3)
	1.233×10^{-3}	cubic hectometers (hm^3)
	1.233×10^{-6}	cubic kilometers (km^3)
	Flow	
cubic feet per second (ft^3/s)	2.832×10^{1}	liters per second (l/s)
	2.832×10^{1}	cubic decimeters per second (dm^3/s)
	2.832×10^{-2}	cubic meters per second (m^3/s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (l/s)
	6.309×10^{-2}	cubic decimeters per second (dm^3/s)
	6.309×10^{-5}	cubic meters per second (m^3/s)
million gallons per day (mgal/d)	4.381×10^{1}	cubic decimeters per second (dm^3/s)
	4.381×10^{-2}	cubic meters per second (m^3/s)
	Mass	
tons (short)	9.072×10^{-1}	tonnes (t)

*The unit hectare is approved for use with the International System (SI) for a limited time. See NBS Special Bulletin 330, p.15, 1972 edition.

**The unit liter is accepted for use with the International System (SI). See NBS Special Bulletin 330, p. 13, 1972 edition.

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